

THIS MONTH: 540 Washington D.C. Bulletin Boards April 1993

BOARDWATCH

MAGAZINE

Guide to Online Information Services and Electronic Bulletin Boards

BUSTED

Rusty and Edie's BBS

Seized By

THE FBI

**FEDWORLD GATEWAY BBS
PLUS**

- List of 100

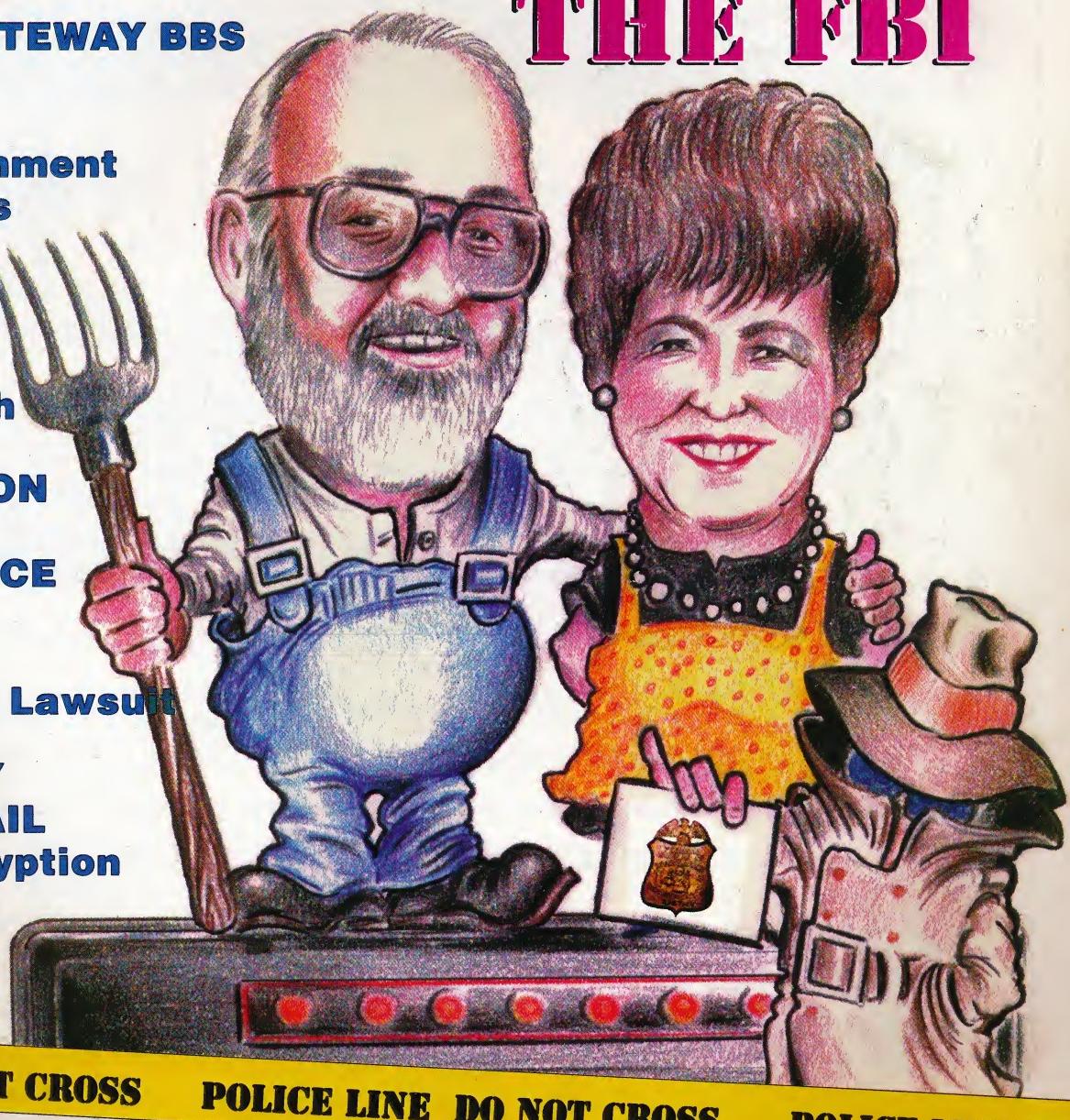
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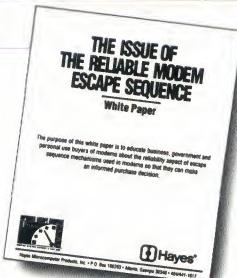
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EDITOR'S NOTES

IT'S AGAINST THE LAW

I don't condone software piracy. I'm not one of those that believe everything should be free. I know too many people who spend their nights trying to puzzle out their next piece of code, and none of them resemble Bill Gates very closely. Most are like Bob Fairburn, trying to put together a little thing done well, do what they love, and eek out a living doing it. More generally, nothing comes from nothing, and without economic legs, little in this world advances very far, or has much impact.

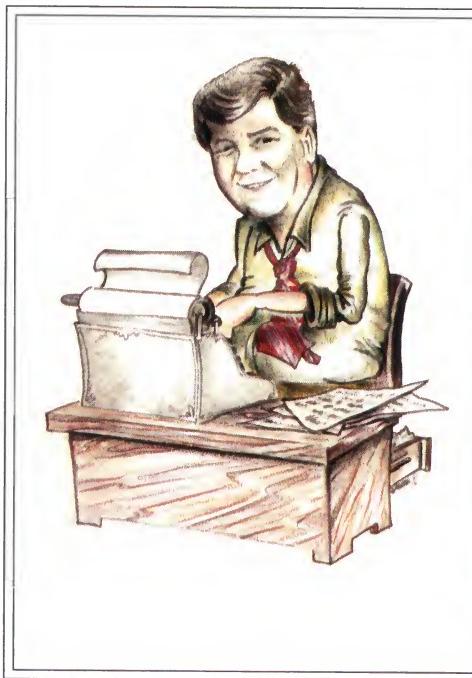
I also confess some reticence regarding the topic of pornography. I personally don't even take the Sports Illustrated swimsuit issue, and I generally shower in the dark. Photos of fat chicks with donkeys don't do any more for me than they do for the donkey, and frankly, some of the images I have had the privilege of viewing online would make even the donkey blush. I don't find any lofty position posturing for "freedom of speech or expression", artistic merit, or anything else in photo-images involving little girls, animals, or graphic depictions of homosexual acts. Despite the howls of rage from the terribly concerned, I find no high ground to take on this issue not already staked out by someone braying with less intelligence than the donkey could possibly muster.

And while it is a very small cut of what goes on in cyberspace, it does go on. There are victims. Not terribly directly. And they are not terribly damaged. But there are the issues of crime and victim, and we should deal with them in an appropriate degree through the existing apparatus of law.

There is also the concept of a level playing field. BBS operators who work within established legal and business norms are immediately put at a competitive disadvantage when some BBS operators decide the law does not apply to them. The nature of callers being what it is, a BBS offering commercial software freely for download, or offering clearly obscene materials online, will

find an audience pretty quickly. Reaching 100 lines in just a few years is quite a task for those playing by the rules.

All that said, we've got a problem. It goes to the heart of a basic sense of dishonesty among our law enforcement apparatus. And it's becoming awkwardly difficult to tell the criminals from the police. The current mode is to use a poorly thought out law intended for mobsters and drug kingpins to seize computer equipment of bulletin boards and other businesses suspected of information crimes. In most cases to date,



these seizures have not resulted in criminal charges.

Whenever called to task on this topic, the FBI, Secret Service, and local law enforcement invariably harp that they were simply gathering evidence as part of the investigation. This is so disingenuous as to be criminal. They don't normally even have the courtesy of hiding their posture on this topic. It is a planned campaign of terror intended to frighten BBS operators into compliance by the threat of an electronic and economic death penalty. The problem with this, and the very reason our founding fathers barred such activity as part of our Constitution, is that it is all too easy to get the wrong man. And the system

further then becomes subject to political or economic motivators inappropriate to a system of justice.

Personal computers are not simply evidence gathering machines. They've become so central to the operation of bulletin boards, publishers, software vendors and developers, and many other businesses, that seizing them constitutes a sentence of economic bankruptcy - from the minute the seizure is made.

There is a principle established by our founding fathers in their Constitutional compromise that was quite explicit in that a resident of these United States is held to be innocent until proven guilty and adjudged to be so by a jury of his peers. In theory, you can be caught red handed running a lawn mower over piles of human bodies stacked on your front lawn and an FBI agent or policeman can't find you "guilty" of anything by themselves. They can detain you on suspicion and present you for prosecution. In fact, judges cannot actually find you guilty of criminal wrong doing under our system of justice. Twelve of your uninterested neighbors who are NOT professionally part of the system have to agree that you are indeed guilty before our system can mete out a punishment. This current practice of seizing equipment under color of search warrant abrogates all the protections built into our Constitutional form of government to preclude this. As such, they constitute not merely a procedural faux pas, but treason.

The Steve Jackson Games Trial illustrates the mockery made of our legal system by bumbling, ignorant law enforcement officials who very nearly put this man out of business by breaking into his office, stealing all his equipment and business records, and there was NEVER a charge filed against him. Indeed, the investigation leading to this ridiculous activity has all the appearance of a mistake. He's not only innocent of all charges, there WERE NO CHARGES and indeed he was apparently not only the wrong guy, it was even the wrong BBS. They were looking for ANOTHER BBS that used the same WWIV software in the same city.

The government's main defense in this case actually appears to be that they were unaware of the Privacy Protection Act, unaware that Steve Jackson Games was a publisher, and that anyway the seizure brought the company media attention and it was HELPED by the publicity. This would all be evil if there were anyone in charge of this with enough sense to have had a design. The lame protestations of the defense in this civil trial finally even turned the judge livid.

And it doesn't stop there. On Saturday, January 30, Russell Hardenburgh had all the equipment it took him years to purchase, and I would think years just to wire together into a **124** line BBS, seized and hauled away. He has a very difficult task rebuilding a business he's been building since 1987. That he made copyrighted software available on this system is quite likely, indeed it was viewed as the biggest open secret in the BBS community, and most BBS operators thought something ought to be done about it. But as of this writing, he hasn't been charged with anything at all. He has already lost his BBS and his **14,000** subscribers are likewise out in the cold - BEFORE any charges have been brought. If the man had been preeeing neighborhood kids in the kitchen blender he would have at least had a trial before beginning his sentence.

Similarly Joey Jay had his **32**-line system hauled away from his Chesterfield Missouri home on January 15, again by the FBI, on allegations of pornographic images. They threatened his FATHER with seizure of his HOUSE and the man subsequently threw his son out into the street. Jay lost his BBS AND his HOME. I would guess from talking to him that Jay DID have such images online. And that may in fact be illegal. But it doesn't appear we'll ever know. There were no charges filed. The penalty was again levied BEFORE the process was even begun.

We don't know that these two men are guilty. We don't know that they are not. We will quite likely NEVER know because it's unlikely they will ever be charged. Their computers were arrested. And it's striking fear in the hearts of computers everywhere. If this

were due to mistakes, it would be one thing. But it isn't. It is part of a planned and executed design to enforce law by not enforcing it. To simply arrest equipment, forego the expense and bother of a trial, and let the victims serve as "examples." If anyone questions this, they innocently claim to simply be gathering evidence - knowing full well they've already sentenced the suspect to bankruptcy.

Not only have the lives and livelihoods of all of these individuals been irretrievably damaged, but large numbers of people who used these systems have found their correspondence has become the property of the government, that government agents are pouring over their private electronic mail, and that their right to assemble and to communicate has not been abridged, it has been abrogated in its entirety - without acknowledgement, notice, or explanation.

Through the gross misapplication of existing evidentiary practices, federal law enforcement officials have basically abrogated their responsibility to enforce laws at all. They are not charging lawbreakers, they are not prosecuting law breakers, they are RUINING individuals who they have reason to believe MIGHT be breaking the law - often on terribly thin allegations. They have taken on the role of judge, jury, and executioner largely because it is inconvenient and expensive to learn the technology and make their case in court. So they cunningly just use the evidence gathering function to deliver the punishment and to hell with the rest of the process.

And that is no law at all. It is a crime. Not a small crime. And not a victimless crime. It is a crime of treason against the state, against our nation, against our citizens, and against our way of life. And it is a crime all out of proportion to crimes of copyright infringement or donkey pornography. Realistically a fine and some community service would likely cover the donkey and the grevious harm done Novell. Treason and the designed overthrow of our Constitutional form of government is generally held to be more serious.

As we sit, on any allegation from virtually anyone that wishes you ill, our government can, and in fact may, break down your door, take your computer equipment and business records, and disappear in the night with virtually no explanation

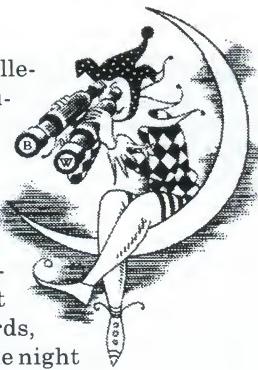
and it will take you years of legal effort and hundreds of thousands of dollars to ever retrieve it. It is a peculiarity of our technological age that this act is virtually an airtight assurance of your bankruptcy. By the time you get your day in court, if you are wealthy enough to afford it, the business you worked for years to build will have been long gone.

You may be guilty yourself of a crime. You may not. It may never come up. On the signature of a bureaucrat so ignorant he can't list a file directory, you can be ruined. And there are enough cases of it happening already that this is no longer an abstract theory. It is happening and has happened repeatedly within the last **45** days. It is happening by design. They are proud of it. And they fully believe that they not only are above the law, but that they ARE the law.

None of this falls within the powers we as a people have granted the state - ever. Our representatives didn't do it by "mistake." A small group of bureaucrats who have made a life of snuffling up to the public trough for a living have taken it upon themselves to do this thing - mainly because it's easy, and because it works - and because nobody has yet yelled booger.

I do not concur with those who treat this situation as something requiring education and conciliation. I have no reason to believe we need to establish "credibility" with our legal system. It has to establish credibility with us. At this point, they seem to seek control by a rule of fear and intimidation - a tactic outside our system of law.

It is the ultimate irony of our time that in a period where totalitarian governments all over the face of the planet are



folding their tents in failure, our nation seems bent on establishing their own as if it were all a new idea. Copy all the software you like. Titillate yourselves till your eyes bleed with goofy bit-images. No matter how you arrange the pixels, as criminals, you're all small timers compared to the felons and traitors behind the badge.

Bill Clinton probably doesn't read all his e-mail at 75300.3115@compuserve.com. But somebody will have to. And your elected representative in Washington would be a good follow up. They won't know there's a problem if you don't tell them. It's a sure bet the SPA is unlikely to carry the torch for you. There's twelve million of you online. And if you don't want to have to apply for the government's permission for every tagline, we'd better get in motion.

Booger.

Jack Rickard
Editor Rotundus

LETTERS TO THE EDITOR

Address correspondence to Letters to the Editor, Boardwatch Magazine 5970 South Vivian Street, Littleton, CO 80127 or by e-mail to letters@boardwatch.com.

Jack:

I received a sample copy of Boardwatch magazine in the mail last week and found it a very useful magazine. I will look for it on the stands in the future and may decide to subscribe if every issue is as good as the one I received as a sample.

There was, however, one disturbing omission in one of the articles. The article about Internet access failed to mention Delphi as either supporting Internet mail (which it has since July of last year) or as supporting Telnet and FTP (which it has supported for a little over a month). I am sure you did not mean to omit Delphi, a major national

consumer online service, from the article. It must have been an oversight. I hope you mention Delphi's Internet capabilities in a future issue.

Thank you for the magazine.

Scott Baker
maxsterling@delphi.com

Hi Jack,

I just received the sample copy of Boardwatch (Jan 93 issue). I have actually been reading Boardwatch for quite awhile now but I think I'll go ahead and subscribe finally.

I do have one slight complaint. The article by Don Rittner did not include Delphi as an I-Net access service. Fact is Delphi provides full I-Net access for a mere **3.00** per month surcharge. I am on the 20/20 plan so I get **20** hours per month for **20** dollars per month. I also pay the **3.00** surcharge so included is full I-Net access and the rest of Delphi's features all, for **23.00** per month. It is the best deal going for I-Net access that I know of. It sure beats GEnie and AOL. You might really want to consider correcting this omission.

Sincerely,
Patrick Adams
patrk@delphi.com

Dear Jack;

In the February Issue of "BOARDWATCH MAGAZINE" you had some good articles on INTERNET. But there was a major error in the article called "FINDING THE ON-RAMP TO THE INTERNET". The article mentions CompuServe, American Online, GEnie and the possibility of Prodigy, but did not mention Delphi.

Delphi has complete access to INTERNET, including e-mail, FTP, Telnet, Gopher, Archie, WWW, Wais and others. Delphi has three payment plans: pay as you go; **10/10** plan, ten hours per month for ten dollars; and the **20/20** plan, twenty hours a month for twenty dollars. The **10/10** plan and the **20/20** plan costs cover everything on Delphi, no extra charges. A Delphi member can get on INTERNET for an extra

three dollars a month.

I would think that Delphi would be a good alternet to the other commercial services. The other services only have e-mail while Delphi gives complete INTERNET service.

I hope this will be of service to the other readers of your fine magazine. Keep up the good work

Craig Colombel
Seattle, Washington
internet address
Colombel@Delphi.com

I'm afraid your points are all well taken. I think the point of the article was to illustrate how to use large commercial services for Internet mail that many of our readers might not normally think of as HAVING an Internet connection - precisely because they DON'T offer ftp, telnet, etc. It was not meant as an exhaustive article covering everything that DOES offer Internet connectivity. Many CompuServe, GEnie, and AOL customers aren't aware that they can at least send and receive electronic mail globally.

BIX, DELPHI, THE WELL, etc. all offer much higher levels of Internet connectivity, have more technically adroit users, and I think it would be perhaps misplaced to offer some candy basic article on "how to send e-mail" for those users. It has nothing to do with DELPHI not being "major". My understanding is that numbers-wise, they would rank fourth just slightly behind AOL and are doing quite well with a very aggressive pricing plan.

That said, I found Don Rittner's article a bit shallow all the way across for my own tastes. We do periodically receive criticism that we're not doing enough for the novices in Boardwatch. The standard party line here is that Boardwatch readers aren't novices very long. But I had been hearing a bit about this lately and so I thought we would put something like this in. Probably a bad move. In any event, I agree that DELPHI is offering one of the connectivity bargains of the year for Internet access, we've written something a bit more descriptive in this issue regarding the DELPHI

program, and your wrath is probably righteous.

How's that for "lots of sucking up."

Jack Rickard

Hello Jack:

I buy your magazine monthly at a local stand and have always found it filled with valuable info. I was especially pleased to see the article about Eastern and Central European Networking. An artist friend and user of my BBS was forced to flee Poland in the seventies and came to the US to teach and produce and exhibit his internationally respected art works. I try to cater the BBS to artists and musicians here in Austin, Texas as I also teach in the Department of Art and Art History at the University of Texas at Austin. My Polish friend and his wife will be very happy to see the contacts listed for getting Internet mail into their homeland.

I have a bone to pick though Jack. Your magazine seems almost to deny the existence of Amiga based BBSs. Pair O Dice BBS is running on an Amiga 3000 using Prospective Software's CNet BBS software, Matthew Dillon's Amiga UUCP, and Brian Clark's CNet <-> UUCP shell. In an article that mentions that there isn't even an implementation to use UUCP with Wildcat! or Major how about mentioning Amiga's CNet and DLG that *do* at this time!

I was happy to see in the January Issue that a lot of the New Zealand boards listed were Amiga supporting or based. How about the rest of us. I am not a rabid Amiga user or supporter like you are likely to run into on the nets, I also use a AST 386 notebook to connect from my office at school to the universities UNIX machines and out through the Internet as well as locally calling home to check up on Pod. I'm just an artist that happens to like the capabilities of the Amiga and find it a fine machine to use. I do admit that the support CBN is fubar and hellish to the extreme, but it is the fine user base that keeps the machine afloat.

Jack, thanks again for the wonderful work you do for the online community with Boardwatch! Give us a call sometime down here. Pair O Dice can be reached at 1.512.451.7117 at 14.4k connected to a HSTDS or the slower callers can get to us at 1.512.451.4610. We offer a lot of original graphics and sound files, as well as a sampling of about 40 USENET groups at this time and full uucp mail. Online games, chat, local messages and more at *no* cost to our fine users.

Best regards and dreams always,

Bob Anderson
Sysop of Pair O Dice
bazooka@well.sf.ca.us

Bob:

Amiga BBSs? There are bulletin boards for Amigas?

Jack Rickard

Dear Jack,

I've received several inquiries about our FTPD NLM for NW, thanks to your commentary in the January Issue. You would not believe what I've gone through to get a copy of your magazine — just trying to find out what the commentary looked like was an exercise itself!

Anyway, interested parties can get a free demonstration copy of our NLM via Anonymous FTP from:

<ftp.msen.com:pub/vendor/murkworks/demos/ftpd/ftpdnlm.zip>

The list price is \$325 per server, with educational discounts of 35%.

We are working on a Telnet Daemon NLM — and looking to integrate telnet access into the Netware Access Server and other programs via LanWorkPlace for DOS.

I've been trying to track down various BBS manufacturers (not much progress on that score) to see which ones are interested in providing incoming telnet access to their BBS systems.

This would allow BBS systems with dial-up IP or leased line Internet access to provide a very wide base of availability to their users. Commercial organizations running support BBS systems (ala WordPerfect, etc) could also provide Internet access and capitalize on their existing systems.

Several questions come up. How should file transfer be handled in this case? (Xmodem/Kermit over the TCP stream, FTP to user specified location, accept incoming FTP requests and generate a temporary account...)

What kind of interest is there in providing outgoing telnet (ala dial-up with modem, and use a 'door' to telnet to a remote host), or outgoing FTP, Archie and Gopher?

MurkWorks is interested in providing solutions which will enable BBS operators to capitalize on the services currently available on the Internet. On the other hand, there are several BBS systems which 'blow-away' existing Internet services currently designed for line mode Unix operation.

I would appreciate hearing your opinions on these topics, if you have time to comment.

Thanks,

Brad Clements
bkc@murkworks.com

ps. We're also working on a UUCP to MHS NLM, and an SMTP NLM with support for MHS, 'PMAIL', and other mail systems, perhaps including QWK format.

Brad:

We're a secret. Now that you know about us, there's nothing I can do, so I guess you're in. But please keep it to yourself.

Similarly, many BBS software vendors seem to want to keep it a secret. But I think you will find interest in these topics will rise in the near future.

File transfer can theoretically be handled quite well over telnet using Chuck Forsberg's ZMODEM protocol. It was

originally designed for packet nets and most BBS callers are familiar with it. I'll admit I don't quite understand why there are problems with this. TEAMate, a high-end BBS package for Unix systems allows ZMODEM file transfers and we've had excellent success on TEAMate systems. Other bulletin boards we've accessed by telnet simply won't do ZMODEM successfully - even if it does support the protocol. I would imagine this is something quite simple, some sort of timeout, but I'm not sure what. Kermit always seems to work, but with very poor performance.

I would say ultimately the concept of ftp and telnet OUT from a BBS is really not a priority in the way most Internet sites view it. FTP almost doesn't make sense since many bulletin boards have larger file collections than the ftp sites. For specific files where a location is given, some form of reverse file server will probably be developed where callers specify a file, directory, and ftp site, and the BBS fetches the file and stages it locally. For telnet, again, I would expect these to be menu items much the way the FreeNets do them, or perhaps after the fashion of Gopher. The BBS operator will setup menus listing CARL or whatever to link out to. Archie might be an interesting door program though. In any event, I think you'll find virtually every BBS package moving toward Internet compatibility over the next 2-3 years. If you can help them get there, you should prosper.

Jack Rickard

Dear Mr. Rickard:

I need to draw your attention to incorrect information appearing in your March issue about Accolade in an article titled "A Surprising Reverse on Reverse Engineering."

In the article written by Lance Rose, it states "Accolade, like Atari, was a licensed developer of Sega game cartridges that sought a way to keep more of the profits by developing its own Sega-compatible cartridges outside the license, through reverse engineering that required the production of interim

copies of Sega software strictly for study purposes."

It is important for your readers to know that Accolade has never been, nor claimed to be, a licensee of Sega. Accolade independently developed its knowledge of the Sega's Genesis system, and used such information to develop its games. The article does correctly state that the court recently ruled that Accolade was within the law in reverse engineering and it was considered "fair use."

I appreciate your sharing this information with your readers. I will be sure to keep you information as new developments arise in this landmark case of Sega vs. Accolade.

Sincerely,
Melinda Mongelluzzo
Product Publicity Manager, Accolade.

Melinda:

Our apologies for the significant error. Consider this information shared with our readers.

Jack Rickard

Jack:

Does Boardwatch put out a magazine index? I would like to be able to look up information in my collection of magazines more quickly.

Kevin Jensen
jens4813@mstr.hgc.edu

Kevin:

I wouldn't say we put it out. But the original reason we put up our own BBS was to provide an online searchable index of article titles. It is nothing fancy, but it's been up since January 1988 and lists the issue and page number of every article since then. (303)973-4222 are the ten magic digits. Go for it.

Jack Rickard

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Jack:

Just read your response in the March issue to Larry Gauper. I must say Bravo !! I just discovered the world of "online" at the age of 58 and I can only say, I wish it had been there when I was a youngster. I have been slowly reaching out to touch people around the world and am beginning to have some success. The

main problem I have as a neophyte, is that I have no idea who's connected to this network. Is there some place I can go to find this kind of information?

I also wanted to say that your comments pertaining to writing were right on the mark. I love your magazine!! Keep up the good work.

Bob Schley
roberts651@aol.com

Bob:

Dial that modem. I have no idea who's connected to it either. But each time you contact someone, it will lead to someone else. Before you know it, you'll have to keep notes. The notes become a newsletter. The newsletter, a magazine. I'm not sure after that. I'll let you know when I get there.

Jack Rickard

Jack,

Would you please do a follow-up article on the MIME Internet message standard? It's been a long time since I've heard anything about it, and I would like to know how it is progressing. Thanks!

Kevin W. Brown
smania!kbrown@uunet.uu.net

Kevin:

Ok. We will.

Jack Rickard

Hi Jack,

My name is Aaron Laramore. I'm a new subscriber to your magazine. In the first issue I ever read, the Feb. 1993 issue, in a subscription ad in the back was a cover for the October 1992 issue, which indicated that Boardwatch had done an article on Native American boards. I have not yet looked at that online back issue, but intend to. I also read with interest the article on Internet connections in Russia. My thinking after reading these articles was that I would be very interested in seeing something similar on African American sys-

tems in N. America, and something about the progress of connectivity on the African continent.

I'm African American and very positive about the potential and promise that telecommunications holds out for African Americans in making the essential connections not only with each other, but with people of African descent throughout the African Diaspora

The civil liberties issues surrounding PGP and government attempts to extend its surveillance capabilities have particular resonance for African Americans, a community which has been the subject of government surveillance and interference on numerous occasions. The communication possibilities inherent in this technology presents an incredibly opportunity for communities which are marginalized. Your editorial comments often allude to your belief in the tremendous social impact of this technology and where it might lead us. Those political and social issues are I think highlighted when discussed in the context of America's social groups like African Americans. So if BW has not already done something in this area(African American systems/the state of connectivity in Africa) its a subject area I would really love to see written up. Arthur McGee (72377.1351@compuserve.com) currently compiles the national list of African American run/oriented systems in N. America, which BW lists on its BBS listkeepers index, and would be a good place as any to start, if you've a mind to explore this topic. I sincerely hope BW might take this topic up in a future issue.

In closing, I love your magazine, I'm an aspiring sysop (gotta finish law school first-OSU) and I share your continuing sense of amazement at where this is going, and the awesome social and political potentials this technology entails has me walking around in a fairly perpetual state of excitement. Continue your great work. Your magazine provides information with far reaching social impact. I'm glad I discovered it. Peace.

Aaron Laramore
pyramid@boardwatch.com

Aaron:

Interesting letter. I'm a nothing-American as far as I know. I'm sure there is some other stuff in there historically, my people bred rather widely, and I have to assume with great enthusiasm. But I'm not sure just what is involved. I guess it's important to retain all the differences we can find so we can have something to scrap about in the future. And that's about my position on multiculturalism.

That said, sure, we'd be interested in doing a treatment of connectivity on the Dark Continent and on African-American bulletin boards. I'm not sure they're necessarily connected, but if it pleases you, I'm game. I have corresponded with Arthur "Rambo" McGee on this topic, and he's offered some pretty capable assistance on this topic. The last I checked, the Internet connection was actually by modem via Randy Bush, one of the FidoNet pioneers, and there was some FidoNet activity. But that goes back a bit I'm afraid. I think it would make an interesting and appropriate topic for Boardwatch. I don't do very well at predicting when we'll do what, but consider it top of the list.

Jack Rickard

Hi Jack,

I had originally intended just to send you email, but I decided, what the heck, your reader's might be interested in this, so I guess you can consider it a letter to the editor.

Obligatory nice (but true) stuff first. I really like your magazine. It is one of the two magazines that I buy EVERY month (the other being Analog Science Fiction). You do a MUCH better job than that "other" mag whose title seems to indicate it caters to "callers", but actually features the most blatant commercial appeals to Sysops, while being pretty boring to the rest of us. Guess it helps to love your work.

The one very mild criticism I have of Boardwatch is that you seem ideologically dedicated to the idea that the online environment is there to make money off of. Admittedly you temper this with the realization that a finan-

cially sound BBS requires much more than a desire to make money (quite true!), but still, I get the vague feeling that you think the sysop with only one line and no ambition to expand is living somewhere in the dark ages of the previous decade. I guess my concern is that if the online environment becomes commercial, all the free stuff will be driven out of the market place. Oh well, I guess we'll see how it goes.

What I'm actually writing to you about was the article on Denver FreeNet, which coincidentally I had just discovered online the night before reading about it in Boardwatch. In the article you mention how networked Colorado is, but I'm not sure you realize just how true that is. Did you know that Cleveland FreeNet is accessible from CARL? Well, not many people do, since the access is indirect and you have to know where to look. Under the "Other Systems" menu option on CARL is a link to MELVYL at U of California. Once you are on MELVYL, just hit Enter to get into the Database Selection Menu and then type CFN as your choice. It will telnet to Cleveland FreeNet. (This choice is actually found on the fourth screen of database options, oddly tucked away under "Library Catalogs Outside California". I guess it takes a librarian. Note that this is not of as much practical value as it would have been even a couple of months ago. As CFN has become more popular it has become VERY crowded. 250 users on at once is not uncommon, and really slows the system down. Often the system is so crowded it just refuses connections. I've found the wee morning hours are usually best to get through. (But note they go down for backups 4:00 A.M. Fridays).

It's a very worthwhile system if you can get through. There is a good selection of Usenet groups, and 1 Meg Internet mailboxes. And of course all services are free.

Best wishes, and thanks for an excellent magazine. It's one of the few sources of info about the on-line environment available off-line that is actually interesting and useful.

Steve Crocker
aq817@cleveland.freenet.edu

Steve:

Thanks so much for the note. I wish all of our Letters to the Editor had a little tidbit of how-to-connect-to-what in them. I knew you could connect to CARL from Cleveland FreeNet, but no, I was completely unaware CARL callers could reverse the connection to Cleveland. Since CARL is a free local telephone call here at (303) 758-1551 in a local dialing area of over 100 square miles, I would imagine your note will cause some traffic.

With regards to the "for profit" bias, I hope not. I think we'll see the BBS industry mature in much the same fashion most industries have, and yes, it will become more commercial. We cover whatever we find of interest and fairly regularly cover some very small single line systems if they are doing something interesting. But for many of us, the days of innocence will be viewed with nostalgia, and I think this was common in automobiles, radio, and many other developing fields historically. I do have to point out that software was either \$100,000 or totally free not so long ago. There was a strong PD community a decade ago and most all PC software was of this nature. Today, we have a very strong commercial software market and indeed the richest man in America is Dollar Bill Gates. But at the same time, there are still PD software titles and a very active shareware market operating in parallel with this commercial software industry. I think we will see a very similar parallel development in bulletin boards. Ten years from now the online industry will have its own Bill Gates, and there will still be interesting single line bulletin boards run out of bedrooms.

Any relation to the Stephen D. Crotcher of PEM with MIME fame in our article on Privacy Enhanced Mail - this issue?

Jack Rickard

Jack:

In the March edition of BoardWatch, on page 19, you published an article titled "File compression Wars Revisited - PKWARE releases version 2.04c of

PKZIP." Everything you wrote about happened to me - and more.

First, my QWK mail reader (OLX 3.01) has an internal zip program and when it met a message packet using the new 2.04 format it presented me with the following warning, "This packet does not appear to have a MESSAGE.DAT file. Either *.QWK is not a valid QWK packet, or you do not have enough free disk space to unpack the packet." This warning did not direct me to the true "problem." To really confuse me, I subscribe to a board with 30 nodes running Novell - some nodes had the new PKZIP and some still had the old PKZIP. Therefore, some of the message packets I downloaded unpacked just fine and other packets from other nodes mysteriously "choked." It was only later that the sysop mentioned to me that some nodes contained the new PKZIP (in all fairness, the message from the sysop discussing the new PKZIP was probably in one of the packets I was unable to unzip).

Once I downloaded PK204c.exe and adjusted my OLX for the external compression protocol, my Norton's NAV falsely detecting the "Malta Amoeba Strain" virus. Norton would not "permit" me to execute the PKUNZIP program. Yes, I had to use the 20A10.DEF file to fix this problem.

Yes, all of this "adventure" lead to "mounting confusion" on my part. And to think I went through all this for a 10% reduction in the size of my *.QWK files. It seems hardly worth it.

Now that PKZIP version 2.4e has been released, I hope all those problems are behind us. Presently, I use the new PKUNZIP but the old PKZIP (ver. 1.10) on my QWK mail reader.

JOHN VINDEKILDE

John:

I hate it when that happens.

Jack Rickard

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Jack:

In your TELEBITS section of the January 1993 issue you featured GPS receiver by Palmtree Products that will connect into a HP95LX.

FYI there are currently on the market today portable GPS receivers made by companies such as PANASONIC, Sony, Magellan, Trimble plus a few more that all feature serial output (ie:300, 1200 baud). The output is formatted using a standard developed by NEMA which I believe stands for National Electronic Marine Association. The format is known as NEMA 0183. Various programs have been written to take advantage of this output including navigational instruments such as Auto Pilots, Radars, Plotters.

All of the above mentioned GPS receivers are battery powered, weatherproof and available for under \$1000.

So while GPSpac is interesting it is not earthshattering.

By the way I have enjoyed your magazine. I feel it is well written and edited.

Thanks

Tony Weiner
0003006908@MCIMAIL.COM

Tony:

I don't recall saying it was earth shattering. I think it was more of a "here's a device and here's what it does" type story. We do a lot of those. The same line of reasoning would pretty much preclude us from doing any future stories on modems.

I did look at a handheld Sony. Nifty device, but it had no serial port and was on the street for about \$900. Without the port, it didn't make much sense to me. I have also looked at the Magellan. They have nothing in the \$1000 range I can find, and certainly nothing at that price with a serial port. The last I spoke with them directly, and it has been nearly a year, they wanted \$3700 for one. I just didn't need to know where I was quite that badly. If what you say is true, it's all good news, but we need details.

Jack Rickard

Hi Jack,

I wanted to clear up a small error in the February issue and give credit where it's due. The article on the Home Power Renewable Energy BBS identified me incorrectly as the sysop of this system. Michael Welch is the sysop of this system which came online last August.

Interestingly the error wasn't a total mistake. I operate Sonoma Online BBS in Santa Rosa CA @ (707)545-0746. We've been serving the online community since 1985 and have a section on alternative energy which is also affiliated with Home Power Magazine. I'm the founder and moderator of the HOMEPOWR national echo conference which is on FidoNet backbone distribution system and available on numerous BBS systems across the U.S. and Canada. Many of the files mentioned in your article have been posted to this conference which serves as a general discussion medium on home brewed power. We started the echo nearly two years ago to spread the word about the viability and importance of alternative energy systems.

We also offer online the text and graphics of the first ten issues of Home Power magazine (most of which are now unavailable in print), and have converted the text files to ASCII (from their native Mac format). We offer many other AE files which are also carried by many of the systems participating in the echo and are available for file request to FidoNet systems (file request AEFILES from 1:125/7 for the list). These were generously made available to us by the publisher (who is pleased to have an ecologically benign medium to distribute the information) and may be carried on any BBS interested in doing so as long as they are not re-printed for profit. In making these files available via our medium they showed rare insight as to what we can accomplish online and we're doing what we can to spread this valuable information far and wide. To date we have had callers from as far away as India, Israel, Russia and Africa download the information so it's really getting around to many parts of the globe where they can put it to good use.

In parting I'd like to thank the

Boardwatch crew for putting out a superb publication which we've found tremendously useful in helping us shape and define the directions for Sonoma Online. We'd also like to encourage folks to call and participate in the Home Power Renewable Energy BBS and help it grow. Michaels done a good job and we wish him and the folks at Redwood Alliance great success with their endeavor.

Warm Regards,
Don Kulha

Sysop, Sonoma Online BBS 1:125/7
(707)545-0746 HST/V.32bis
don.kulha@f7.n125.z1.fidonet.org—

Jack,

I would like to take a few lines to clarify some misunderstandings regarding the recent Sportster issue. There is a great deal of misinformation being distributed by the numerous networks and magazines. The basic facts really make it all quite clear.

First, let me agree that the legal document U.S. Robotics distributed aided in this misunderstanding. While the intent was simple and true, the complexity of the document may have been too great for the issue. U.S. Robotics has never attempted to copyright ANY "AT" command. The document clearly states "USR has not authorized dissemination of this "firmware". We have located one such dealer in the Florida area as well as other individuals selling copied firmware and/or modems with copied firmware and are actively seeking legal action.

Another important point is the daughterboard similarities. While the daughterboard may be the same, this in no way makes it the same modem as the Dual Standard. There is an extensive list of option not available in the Sportster that the Courier offers, among these being ASL, Synchronous, and Lease Line.

Finally, I would like to address the Trojan Horse issue. In fact we have several copies of trojan versions of the USRPATCH type programs. This is an issue we had spirited discussions over. The final decision was this was a rela-

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tively no-win scenario for US Robotics. To not announce this potential problem (especially since we had live examples) would keep us from this very discussion, but left us feeling guilty without having actually done the harm ourselves. Commenting on the Trojan Horse existence certainly gave everyone the chance to accuse us of scare tactics, but leaves us with a clear conscious. Sometimes goodwill must come before straight business. We agree the notification should have more clearly stated the nature of these trojans. BTW, we would be happy to send you copies of the trojans we have collected from various sources should you desire a look.

We appreciate the chance to reply to your editorial. This was a classic case of misinformation quickly being accepted as fact. We appreciate the chance to clarify these misconceptions for you and your readers.

Regards;

Adam A. Strack
Manager, Customer Service
U.S. Robotics.

Adam:

We've received a number of notes from Boardwatch reader's who won the USRobotics Sportster lottery. In all cases they had already bought a Sportster, and didn't know about the additional capability until they read our story. I can't believe this has been anything but a plus for U.S. Robotics in terms of public relations - with the exception of the document you note. And I can't believe it's cost a sale of a Courier - as you point out there are still notable differences in the modems. I can only dream that all of our readers someday find more value in a copy of Boardwatch than we somehow intended them to have. We would not issue a recall, I can assure you.

With regards to those making illegal copies of your firmware by burning ROM copies, we do not condone this type of activity ever and in any fashion - period. True, it is illegal. But further, those seeking a shortcut through such methods will usually find themselves with a modem that may or may not operate

correctly now, and in any case without possibility for further support from the vendor in the future if they do have problems - one more headache that is just not worth the bother for the little bit saved. Life online is complicated enough.

Jack Rickard

Dear Jackie:

Normally I feel your magazine is rivaled only by the Bible for truth and eloquence and that only gems of wisdom fall from your little computer keys, but... I was horrified when you responded to the nice man's invitation to bring ONE BBS CON to Florida and even stay at his home with four and a half column inches of not only NO but HELL NO. That was RUDE. I raised you better than that.

Also, you should fire your printer. Page 10 of the Letters to the Editor was so faint that I could barely read it. The Letters to the Editor and the Editors Notes are my favorite part, well actually, the only part of the magazine I understand.

Thanks for the five complimentary copies that I requested for Show and Tell.

Love, Mom

Err..yes mother.

Actually, it wasn't precisely "hell no." And while I did play about a bit for the comical aspects of the situation, if you had been able to read page 10, it wasn't even quite a "no." We are looking for a site outside of Colorado for ONE BBS CON 1994, and Florida is pretty high on the list. This wouldn't have anything to do with your sun worship/beach stuff would it?

I'll have a word with the printer. But I've been through several in the last year, and if you keep firing them, we may run out of them here locally.

Jackie

TELEBITS

RUMOR MILL - PAY NO ATTENTION TO THAT MAN BEHIND THE CURTAIN

John Perry Barlow - co-founder of the Electronic Frontier Foundation and lyricist for the Grateful Dead band appears to have relocated from the wilds of Montana to take up residence in NEW YORK CITY, where no good Salsa can originate. But persistent rumors indicate he's working on some type of book dealing with Cyberspace. For those who missed his original missives on Operation Sun Devil that made the rounds online, most notably *Crime and Puzzlement*, Barlow has a rare online gift - he can write. In fact, he writes really well. We would look forward to such a book.

On the topic of the EFF, we published their announcement of their reorganization and redirection last issue largely without comment. We thought they might hear quite enough about it from the online community without any of our bumbling assistance. Apparently so. They've taken quite a beating on the wires. Partial recovery seems to involve reinstatement of Mike Godwin, who has done quite a bit of good work counseling BBS operators on legal positions. Under the reorganization, Godwin was "out." Rumor has it he is now back "in" and going to join the Washington D.C. office. Almost concurrent with the EFF's reorg, it seemed the damn burst on BBS raids this past January/February and Godwin is quickly becoming popular with BBS operators - probably entirely unrelated to his reinstatement, but fortuitous nonetheless.

The Clinton White House is looking to become a little bit more technically aggressive regarding internal communications. Rumor has it that Clinton was aghast to find a telephone system manned by operators plugging cords into jacks to connect calls in the White House. Despite harsh economic times, Clinton apparently feels the nation can afford a new phone system for the White House. And electronic mail is going to

figure into the equation. The White House and CompuServe have been wrangling with the question of what you do with all the e-mail if a public e-mail address were published. We think we might be able to hurry things along by telling you that an Internet message to 75300.3115@compuserve.com pretty much IS the White House. Messages to that address have been resulting in a return message that the message buffer for that address is full. The "buffer" was recently expanded to a 1000 slots and will go to 10,000 soon. We understand CompuServe was actually called into the site on February 5th to talk about an MHS hub connection to the service to pick up mail, and helping the White House staff learn how to use various software programs to automate the sifting, sorting, directing, and so forth they will have to do to manage the influx of mail once the cat is out of the bag. (For Boardwatch readers, it is out). Rush Limbaugh (70277.2502@compuserve.com) should be all pink and giggly to learn this. He's been pretty actively promoting CompuServe's \$12.80-per-hour-overpriced service on his radio show as THE way to be online. Artisoft's LANtastic, despite some early misadventures with Windows and upgrades, is apparently making some moves of interest. They now have a card and software allowing Macs to connect to DOS networks, they apparently are pretty much cozy with Windows 3.1, and they are introducing a VERY interesting TCP/IP add-on for their network. BBS operators have been split on this product for several years with many reporting all-encompassing love affairs with LANtastic and others reporting chilling horror stories. The company has had some internal personal changes, and released a flurry of new stuff in the last 6 months. We're going to some effort to put the new stuff through its paces and you can expect full details in a future issue of Boardwatch. We're hoping to bring you some pleasant surprises...

Windows for Work Groups seems like a neat idea. A darling little e-mail application, a group scheduler,

real time "chat" and you can hook up Windows machines with LAN hardware and no real LAN operating system except for Windows for Work Groups. LANs for the rest of us. This seems to be a Microsoft jab at Novell, part of an emerging battle of software titans. Novell has made a fortune in high priced LAN software averaging some \$2500 a pop, while Microsoft never has been able to quite give it away. So apparently Microsoft has decided to literally give it away. But there are problems. For one thing, it really won't work with any other already installed LAN. And if you have mixed Windows and DOS machines, you are out of luck. Rumor has it that DOS 6.0 will include the LAN links to work with Windows for Work Groups. But even worse, the FIRST question asked by technical support groups for software all over the country has just been revised to "Do You Use Windows for Work Groups." Apparently, most everything has problems with it at this point...

Interesting numbers department - Prodigy Services is now noting that subscribers are entering some 170,000 messages DAILY into their now 400 some odd bulletin boards. Including both reads and writes, they are processing some **400 message transactions per second** on the system.

RAM Mobile Data is making some progress selling their pricey wireless e-mail network. Hewlett Packard is going to announce built-in software in their new HP-95 palmtop model to work with the MOBIDEM wireless modem. Intel is apparently going to announce distribution of a compatible wireless

modem. And Bell South is going to extend the RAM Mobile Data network to another 192 cities. We still think this technology, pricing, and network model is a BIG loser. But they are working hard at gaining allies.

NUMBER GAMES - HOW MANY PCs ARE THERE?

We often get the question "how many PCs are out there?" Like most questions, this depends on further analysis of how you define PC, and how you define "out there." IBM compatible personal computers all use one of the CPU chip models developed by Intel Corp. A few use clone chips developed by AMD. We have some sales figures on those chips. Note that there is a small market for these chips as controllers in various devices, but the bulk of them go to personal computer manufacture.

The accompanying table listing microprocessor sales would make it appear that there were nearly 21 million XT class machines manufactured, some 37 million AT class machines, 50 million 80386 machines, and some 9 million 80486 machines for a total of 117 million personal computers. Since NEC also made a few NECV20 and NECV30 chips, and IBM made its own chips under an agreement with Intel, 120 million PCs manufactured would be a very conservative estimate.

How many are still in operation? If we assume that ALL XT and AT class machines have gone to the closet, we still have some 62 million '386 and '486 machines working. If we assume half of the AT machines are still in use, and no

<u>Microprocessor</u>	<u>Intro Date</u>	<u>Original Price</u>	<u>Highest Speed</u>	<u>Addressable Memory</u>	<u>Transistors</u>	<u>Units Shipped</u>
Intel 8088	06/79	\$360	8 MHz	1 MB	29,000	20.5 million
Intel 80286	02/82	\$360	12 MHz	16 MB	130,000	37.0 million
Intel 80386DX	10/85	\$299	33 MHz	4 GB	275,000	15.5 million
Intel 80386SX	06/88	\$219	33 MHz	16 MB	275,000	22 million
Intel 80486DX	04/89	\$950	50 MHz	4 GB	1,200,000	5.2 million
Intel 80386SL	10/90	\$150	25 MHz	4 GB	855,000	1.8 million
AMD Am386DX	03/91	\$210	40 MHz	4 GB	161,000	4.3 million
AMD Am386SX	04/91	\$76	40 MHz	4 GB	161,000	5.7 million
Intel 80486SX	04/91	\$258	33 MHz	4 GB	900,000	9.2 million
Intel 80486DX2	04/92	\$550	66MHz	4GB	1,200,000	.9 million

XT's, (again, a pretty conservative assumption) that would bring us to 80.5 million units.

We estimate that on average, 28% of these computers are modem equipped. This would indicate a PC with modem population of some 22.5 million. But if we work our estimates of how many people are on bulletin boards from the other end, we arrive at about 12.2 million active on bulletin boards. This leads us to the question, what do the other 10.3 million modems do?

And another question: where did the 40 million older machines no longer in use go? If the average PC case was 7 inches tall, and you stacked those 40 million PCs on top of each other, the stack would stand 4,419.19 miles high - hardly something you could miss driving down the freeway. And how about the monitors? How high would those stack? After some experimentation, we've determined that you couldn't in all probability stack them more than 3 high without them falling over - so they would just make a mess - which I suppose we've done with this article.

AT&T PARADYNE MODEM OPTICAL LINE INTERFACE

We were intrigued by AT&T Paradyne's announcement in last month's issue regarding their sysop discount program for the DataPort 14.4 modem they are making available to qualified BBS operators at a price of \$206. They alluded to a new feature called Optical Line Interface. We guessed this was some form of impedance matching interface, but it was pretty much a guess. We've since received further information from their engineering staff in Largo Florida and think it's worth a mention. Technophobes will probably want to move onto the next story, and kids, don't try this at home.

The concept is not entirely new, but it is interesting in this modem. Basically, modems are not really connected to telephone lines. For that matter, telephones aren't either. The two copper wires dangling from the wall carry a DC voltage that is "modulated" by audio tones. Devices connected to these wires

must comply with certain FCC regulations that basically define how devices appear to the telephone company equipment and the line. Within modems, telephones, answering machines, fax machines etc., some provision must be made to "isolate" the device from the line. Typically, this is an impedance matching transformer.

Transformers operate on the principle that if you run an alternating current waveform through a coil of wire, a similar waveform of opposite polarity will be "induced" in a second coil of wire held in near proximity to it. The two coils have no physical or electrical connection beyond the inductance "field" setup by the waveform in the primary coil. In this way, the primary coil with the dc carrier will "couple" the ac waveform only to the secondary coil - there is no connection for the dc component and so the device is said to be "isolated" from the line.

There are two problems with this almost universal method. First, for the maximum amount of signal "coupling" between the two coils, the vectored sum of inductance, capacitance, and resistance (impedance) in the transformer should match exactly the inductance, reactance, and resistance (impedance) of the telco line circuit. Further, any mismatch not only reduces the amount of signal that is coupled to the device, it also causes signals to be "reflected" back up the line. This is often termed near-end echo.

The second problem has to do with the tendency for transformers to introduce harmonic distortion. More expensive and physically larger transformers exhibit less of this, but the trend in modems is of course toward very small devices, and cheaper ones.

At today's higher modem speeds of 14.4 kbps and higher, one of the critical elements in passing data is echo cancellation. Broadly, this is the ability of a modem to eliminate its own transmitted signal from interfering with the signal received from the other modem. Impedance mismatch that causes near-end and far-end echoes causes some problems here. And harmonic distortion appears simply as noise that the

signal must rise above to be heard.

In a perfect world, transformers actually don't do a bad job of impedance matching and isolation. The problem is that we all live varying distances from the local telephone central office switching station. The line impedance of a loop between the CO and your house varies dramatically with distance. If you are 1000 feet away, it is much different than if you are 6000 feet distant. If your modem was designed and tested on a short local loop, it will suffer a fairly noticeable drop in performance on a long loop. Oddly, the reverse is also true. If it was designed on a long loop, it can actually perform worse on a short loop because of the importance of this impedance matching.

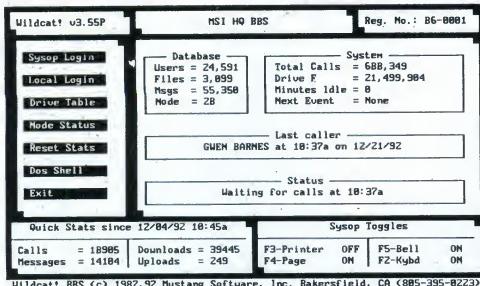
Optical line interface takes a little different approach to isolating the modem from the line while still coupling the ac waveform. Basically, small light emitting diodes are modulated by the waveform to produce a light beam of varying intensity and photosensitive detectors convert this varying light beam back into an electrical signal. Like the transformer, there is no physical or electrical connection to the telephone line across the path of the light beam. Light itself is used to couple the audio waveform to the modem.

The advantage here is that the components used to create this light bridge have extremely low levels of capacitance and inductance. It presents an almost purely resistive load to the line. This basically causes a much less critical impedance match between the device and the line. Further, there is virtually no harmonic distortion. The result is a lower noise level and ostensibly a much better impedance match over a wider range of line impedances.

Consequently, the AT&T modem will not likely show you much improvement on a good line. But on noisy lines and particularly in situations where you are either very close or very far away from the CO, it can perform noticeably better. And this improvement is not at all dependent on what kind of modem is on the other end of the line. Modems calling your BBS are just as subject to the reflected images and noise caused

WILDCAT! BBS

Wildcat! leads the pack when it comes to features, performance and innovation. MSI was the first to include offline mail reading software in a BBS package, the first with MHS support, and is the only company to offer NetWare bindery access and a multiline product that runs eight lines with separate DOS sessions on a single PC. There's a Wildcat! version for just about any application from a single-line neighborhood BBS to a wide-area network system.



Check out these features!

- XMODEM, YMODEM, ZMODEM, YMDEM-G, 1K-XMODEM-G and KERMIT.
- Multi-line operation of 250 nodes, up to eight on one PC.
- DOORS
- 1,000 message conferences, file areas and security levels.
- Full-screen message editor with quoting.
- File attachments to messages.
- Text can be uploaded into a message.
- File marking while viewing for later download.
- Operates with virus checking software.
- Full sysop maintenance when system is taking calls.
- 1,000 configurable events per node.
- Relational links between the message area, file area, and user databases, allowing the sysop to access related records.
- Enhanced support for CD-ROM files and changers.

We have the best value in BBS software. You don't have to buy an add-on mail door or add a program to make it do simple Zmodem downloads! The popular remote control program DOORWAY is even included FREE with the IM version of WILDCAT! You not only get the most for your money when you make your initial purchase, but you get full credit for your software investment when you upgrade it to support extra lines. We appreciate our customers.

Check out these prices!

The **Wildcat! Single Line** release supports one incoming phone line on a single PC or network workstation. It also lets you run your BBS in the background under DESQview! **\$129.00**

A great entry-level BBS or office system, **Wildcat! Multiline** handles 1-10 incoming lines. It can operate on a LAN where all ten lines can be dial-in or local access. Installed on a single PC under DESQview, Wildcat Multiline is able to handle up to four incoming lines plus local access. **\$249.00**

The **Professional Multiline** release supports 1-250 incoming lines or local LAN connections, and has all the same features of the other systems, including DESQview support. **\$499.00**

The **Intelligent MultiPort (IM)** version is a special release of WILDCAT! that communicates only with the DigiBoard Intelligent Multi-Port card. Using WILDCAT! IM you can connect up to eight external modems via an octopus cable to a single 486 using the multitasking program DESQview from Quarterdeck Office Systems. Multiple DigiChannel PC workstations can be linked together on a LAN to provide 16, 24, or even 32 or more lines since the IM version supports up to 250 connections. **\$799.00**

If you haven't tried Wildcat! you haven't experienced the best in BBS telecommunications today. **For a free copy or our Test-Drive version, call 1-800-999-9619 and ask for offer #WB100.**



Redefining Telecommunications in '93

by impedance match on your end as they are on their own end.

We've fallen seriously out of romance with line simulator test sets. They do not appear to accurately simulate the cumulative variety of damage done on a long distance telephone connection. So we've adopted a bit of our test set consisting of bulletin boards around the world and a known 9dB drop we can induce through our telephone system at will. A real life opportunity presented itself the other day when we were unable to link up with Merlin Systems BBS in Ottawa using three different modems. We would get sort of a connect at 7200 or 4800 bps, but the noise was so bad we couldn't actually get characters to make the trip with any reliability. And we wanted some largish files from this system. "Why not connect the AT&T DataPort and see if this Optical Line Interface means anything," suggested Earstwhile Assistant.

The DataPort got a 14.4 connect on the second ring with a very brief handshake. While the difference was dra-

matic, these WERE bad lines. It dropped to 9600, 7200, and eventually 4800 bps over the course of the next 10 minutes. But there were no lengthy retrain pauses, even the downshift was almost unnoticeable. When we actually began downloading, we were down to about 450 characters per second which held quite well at that level. Anecdotally, this modem looks like a champ on poor lines. And while it does use AT&T's own chipset instead of the nearly ubiquitous Rockwell chipset, we suspect that the Optical Line Interface plays a significant role. For more information, contact Scott Frazee, AT&T Paradyne, Mailstop LG219, 8545 126th Ave North, Largo, FL 34649; (800)554-4996 voice; (813)530-8276 international; (813)530-2398 fax; Internet: s.frazee@pdnis.paradyne.com

FIDONET MAIL ON 64 LINES - ESOFT RELEASES TIMS UPGRADE .

eSoft, Inc., makers of **The Bread Board System** (TBBS), released the long-awaited **TIMS Version 1.1** upgrade in

February. TIMS is an "option module" for TBBS, which extends the functionality of the BBS to include FidoNet store and forward electronic mail capability.

TIMS (The Integrated Mail System) handles FidoNet sessions concurrent with human callers on a TBBS. Up to 64 telephone lines can be servicing callers as well as sending and receiving mail, including outdial delivery - all at the same time.

The 1.1 upgrade enhances TIMS to include out-dial support. In the previous version, TIMS accepted and processed automated mail calls from other FidoNet systems, but required a separate mailer such as BinkleyTerm to dial out to remote systems for mail delivery. TIMS now handles this internally, along with a rich set of configuration options to control the delivery and receipt of mail.

TIMS 1.1 also includes new **ZMODEM** support, including the **ZMODEM-90** extensions like MobyTurbo and RLE

Wouldn't it be nice to be able to "PLUG IN" a CDROM Disk then take a vacation from your BBS?
Well, we have one that can do just that...
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compression. When a TIMS talks to another TIMS system, ZMODEM-90 is used for the session.

With its capacity to handle 64 simultaneous mail sessions, TIMS is suited for FidoNet mail hubbing situations. eSoft included "dual CPU hubbing" support so that in a LAN environment, hubbed mail can be processed in real-time.

Even outside of hub situations, however, TIMS also tosses mail into TBBS in real-time. The only proviso is that the mail must hit TIMS in raw packet (uncompressed) form, leaving ARCamail in place for offline processing. NetMail (although not EchoMail) is also scanned in real-time, allowing immediate delivery of personal mail not possible before.

George Peace, North American Coordinator for FidoNet, says "TIMS works so well, I am moving all of my mail operations to TBBS/TIMS. It revolutionizes FidoNet Mail and File distribution. It's really amazing to see several lines dialing out at the same time to deliver mail and files. The days of the Super Hubs are gone. One small TBBS/TIMS can replace several of the FidoNet Super Hubs."

TIMS Version 1.1, \$149. (Upgrade from 1.0, \$45 plus shipping.) eSoft, Inc., 15200 E. Girard Ave., Suite 3000, Aurora, CO 80014; (303)699-6565 (Voice); (303)699-8222 (BBS); (303)699-6872 (Fax).

ASP LAUNCHES BBS SOFTWARE DISTRIBUTION NETWORK

The Association a Shareware Professional (ASP), a trade association of shareware authors, has taken an active roll in promoting BBS distribution of its members' software with the introduction of the ASP Hub Network. The network, a group of seven BBSs in the US and Canada, will be stocked with the latest and greatest from ASP members.

The ASP began approving BBSs nearly two years ago, certifying that particular systems meet certain ethical standards in their presentation of shareware. The Hub Network elevates seven of those systems to be distribution points, providing free and immediate access to ASP member

products for callers. The products come directly from ASP member developers.

The systems are:

The Consultant, Brooklyn, NY,
(718)837-3236
The Break RBBS, Dale City, VA,
(703)680-9269
The Twilight Zone, Auburndale, WI
(715)652-2758
The DataExchange, Leesville, LA,
(318)239-2122
Attention to Details, Mira Loma, CA,
(909)681-6221
Space, Menlo Park, CA,
(415)323-4193
Knightec, Orangeville, ON,
(519)940-0007

SYNCHRONET BBS ANNOUNCES REMOTE IMAGING PROTOCOL COMPATIBILITY

Digital Dynamics has announced that revision 1 of version 1.1b of Synchronet Bulletin Board System will support the RIP graphics protocol developed by Telegrafix. The new release will ship with RIP menus and will support the coming RIPaint menu editing package from Telegrafix. RIP is a true interactive mouse-driven graphical interface. The RIPterm program required to use this interface is public domain and can be downloaded from the Synchronet support BBS at (714)529-9547.

The new Synchronet release also includes internal support for Postlink networks. Postlink is the software used by the RIME network. Synchronet also supports .QWK, FidoNet and other messaging networks and claims to make connecting to such networks easy for the system operator with menu driven configuration screens. Also included in the new rev 1 release:

Incoming FAX support using ZyXEL FAXmodems.

Topical chat areas with optional password protection and security flags.

PCBoard, Wildcat, Celerity, and

WWIV message and menu color support for networked subboards.

User database expanded to support 9000 users.

Text and menu options can be hidden by security level.

Send FidoNet NetMail from an QWK offline reader.

On-line message quoting.

Support for callback verification doors written for Remote Access, QuickBBS, or SuperBBS (EXITINFO.BBS drop file).

Seamless integration of external door programs.

The rev 1 version is a free upgrade to registered version 1b users and can be downloaded from the support BBS. Synchronet allows up to 10 nodes on a single PC under DESQview with LAN connectivity for a maximum of 250 lines. Their support BBS sports 8 nodes on a single 50 MHz 486. New pricing will include a 2 user version at \$99, a four user version at \$149, a 16 node version at \$199, and a 250 node version at \$399. Digital Dynamics, PO Box 501, Yorba Linda, CA 92686; (714)529-6328 voice; (714)529-9547 BBS.

MAJOR BBS AND TELIX BACK RIP GRAPHICAL INTERFACE

Galacticomm, Inc. announced on February 1 an alliance with deltaComm Development, and TeleGrafix Communications, Inc. to unite BBS technology and terminal software development toward an online graphics standard.

deltaComm develops the popular Telix terminal communications program. TeleGrafix is developing the **Remote Imaging Protocol (RIP)** - RIPscrip, a graphics protocol designed specifically for BBS applications.

"Our mutual goal is to greatly simplify the operation and use of bulletin board systems by the computing world," comments Galacticomm Vice President Scott Brinker. "This means having a

common graphics standard that is supported by both leading BBS and terminal program manufacturers. We've chosen the RIPscript solution because of its elegance and portability. And we couldn't be prouder about working with the Telix development team."

TeleGrafix CEO Jeff Reeder says, "RIPscript - a Remote Imaging Protocol - is more efficient and flexible than the NAPLPS (North American Presentation Level Protocol Syntax) standard used by Prodigy. Since we have a lot of experience in the BBS world, we were really able to target the needs of BBS operators and users. Almost any BBS can implement RIPscript support, and we're particularly pleased that The Major BBS and Telix are joining forces to support it as an integrated feature."

"Telix development has always been driven by the needs of its users," says deltaComm President Jeff Woods. "Now, more than ever, we're hearing the need for a common graphical standard. By working with Galacticomm and TeleGrafix, we intend to lead the way to a dazzling future of online graphics and eventually multimedia. This is just the beginning. The alliance of BBS vendors and term program vendors has been long overdue. There are a number of ways we can work hand-in-hand with Galacticomm to provide more benefit to our mutual customers."

A major new release of Telix is expected this summer at the ONE BBSCON. Over 800,000 people use Telix as their preferred terminal software. Galacticomm is expected to release Version 6.1 of The Major BBS sometime this spring, and Brinker did hint that integrated RIPscript support would be included. For more information, contact Galacticomm, Inc. at (305)583-5990, deltaComm Development at (919)460-4556 or TeleGrafix Communications at (714)846-4179.

ADULT BBS GUIDEBOOK

Keyhole Publications has announced the February 23 release of *The Adult BBS Guidebook* by Billy Wildhack. This 128 page tome provides an overview of adult bulletin boards. It lists

over 100 adult BBS and takes a close-up look at 45 popular systems.

"With this book, we finally have a road map to the world of cybersex," says publisher Steven Kosek. "The Adult BBS Guidebook makes this vast underground network more accessible and more comprehensibly for both experienced and novice computer users."

The author of the book is a computer programmer and journalist who writes articles on personal computing and reviews of new software under his real name - which isn't actually Billy Wildhack. The Adult BBS Guidebook is available only by mail order at \$12.50 including shipping and handling. Keyhole Publications, PO Box 35, Sycamore, IL 60178; (815)895-7900 voice; (815)895-7901 fax.

INFOWORLD ADDED TO COMPUTER SELECT CD-ROM AND ONLINE SERVICES

Ziff Desktop Information's Computer Library group has announced it has reached agreement with InfoWorld Publishing Company, a unit of International Data Group, to incorporate the full text of *InfoWorld*, a leading weekly newspaper covering the personal computer industry, in *Computer Select*, Ziff's database of computer product and industry information.

Computer Select is one of the most extensive databases of industry information available offering the full-text contents of 71 industry publications such as *InfoWorld*, *PC Week*, *MacWEEK*, *PC Magazine*, and others and abstracts from over 100 other computer publications. The database contains nearly 80,000 full text and abstracted articles, specifications for more than 74,000 hardware, software, and communications products, and profiles of over 13,000 companies. Computer Select is available on CD-ROM as an annual subscription with monthly updates and online through ZiffNet and CompuServe information services.

According to Seth R. Alpert, Ziff Desktop Information's Vice President, Strategic Product Development, "As the

computer industry grows, participants need to learn to work together in areas where cooperation expands the market by increasing the value delivered to users. This applies to computer-related publishing as surely as it does to software and hardware products. Our agreement with *InfoWorld* is very much in this spirit. The addition to Computer Select of the full contents of publications like *InfoWorld* and IDG's *PC World*, which was added in October, that compete directly with Ziff titles like *PC Week* and *PC/Computing*, are important milestones for the industry and for users. We'll continue to enrich Computer Select by adding high-quality publications from a variety of sources."

"We know that our readers have been frustrated by not having a single reference source for the full text of both *InfoWorld* and its weekly competitors," said Stewart Alsop, editor-in-chief of *InfoWorld*. "We believe that providing this service to our readers far outweighs the issues of competition between our companies. We are also confident that *InfoWorld*'s cross-platform, systems-oriented coverage will compare favorably with the other full-text publications carried on Computer Select."

The Annual CD-ROM subscription is \$995 per year. But if you need research access to what's being said in the computer industry, this is the definitive work. Ziff Communications Company, 25 First Street, Cambridge, MA 02141; (800)827-4889 ext. 517 voice; (617)252-5551 fax.

GALACTICOMM INTRODUCES MAJOR GATEWAY/INTERNET FOR MAJOR BBS

Galacticomm, Inc. announced the February 8 release of Major Gateway/Internet a new add-on option for the company's flagship product, The Major BBS. Major Gateway for Internet offers users of The Major BBS the ability to send and receive Internet E-mail and Usenet NewsGroup messages.

Major Gateway/Internet can run either on the same machine as the BBS or a separate PC used for mail. On a sepa-

BBS MODEM DISCOUNT PROGRAMS

VENDOR	MODEL	LIST	SYSOP	BBS	VOICE	FAX
AT&T Paradyne	Dataport 14.4/Fax	\$555	\$222	No BBS	813-530-2000	813-530-2398
ATI Technologies	9600 ETC-E	\$499	\$275	416-756-4591	416-756-0718	416-756-0720
Cardinal Technologies	9600V42 V.32	\$349	\$219	717-293-3074	717-293-3000	717-293-3104
Cardinal Technologies	14400V32bis	\$449	\$249	717-293-3074	717-293-3000	717-293-3104
Computer Peripherals	Viva 9624e V.32	\$349	\$249	805-499-9646	805-499-5751	805-498-8306
Digicom Systems	ScoutPlus V.32bis	\$389	\$210	508-262-1412	408-262-1277	408-262-1390
Digicom Systems	Scout V.32	\$299	\$195	508-262-1412	408-262-1277	408-262-1390
Galaxy Networks	UFO V.32bis	\$999	\$299	No BBS	818-998-7851	818-998-1758
GVC Technologies	FM-9696/144VV.32bis	\$689	\$413	201-579-2380	201-579-3630	201-579-2702
GVC Technologies	SM-96VV.32	\$599	\$329	201-579-2380	201-579-3630	201-579-2702
Hayes Microcomputer	Ultra 144 V.32bis	\$999	\$499	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	Optima 144+Fax	\$519	\$299	404-446-6336	404-840-9200	404-449-0087
Hayes Microcomputer	ISDN System Adapter	\$1199	\$650	404-446-6336	404-840-9200	404-449-0087
Image Communications	Twincomm 9600 V.32	\$299	\$279	No BBS	201-935-8880	201-935-6548
Intel Corporation	14.4EX V.32bis	\$549	\$269	503-645-6275	503-629-7000	503-228-9707
Intel Corporation	9600EX V.32	\$599	\$299	503-645-6275	503-629-7000	503-228-9707
Multi-Tech Systems	MT932BA V.32	\$869	\$435	612-785-9875	612-785-3500	612-785-9874
Multi-Tech Systems	MT1432BA V.32bis	\$899	\$450	612-785-9875	612-785-3500	612-785-9874
Practical Peripherals	PM14400FXSA V.32bis	\$549	\$250	805-496-4445	805-497-4774	805-374-7202
Practical Peripherals	PM14400FXMTV.32bis	\$399	\$200	805-496-4445	805-497-4774	805-374-7202
Quadralink Technologies	1496V+	\$360	\$320	416-538-9999	416-538-0101	416-538-1355
QuickComm	Sprit II V.32bis	\$249	\$220	408-956-1358	408-956-8236	408-956-1345
Supra Corporation	SupraFAX V.32bis	\$399	\$249	503-967-2444	503-967-2400	503-967-2401
Supra Corporation	SupraFAX V.32	\$299	\$199	503-967-2444	503-967-2400	503-967-2401
Telebit Corporation	T3000 V.32bis	\$949	\$399	408-745-3229	408-734-4333	408-734-3333
Telebit Corporation	WorldBlaze	\$1049	\$429	408-745-3229	408-734-4333	408-734-3333
Telebit Corporation	QBlaze	\$549	\$299	408-745-3229	408-734-4333	408-734-3333
U.S. Robotics	Courier DSV.32bis/Fax	\$1295	\$449	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier V.32bis/Fax	\$695	\$299	708-982-5092	708-982-5010	708-982-0823
U.S. Robotics	Courier HST V.32bis/Fax	\$995	\$349	708-982-5092	708-982-5010	708-982-0823
Ven-Tel	EC96 V.32	\$699	\$439	408-922-0988	408-436-7400	408-436-7451
ZyXEL	U-1496 +V.32bis	\$989	\$549	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496E+V.32bis	\$649	\$399	714-693-0762	714-693-0804	714-693-0705
ZyXEL	U-1496EV.32bis	\$469	\$299	714-693-0762	714-693-0804	714-693-0705

rate machine, e-mail and newsgroup messages can be sent and received in real-time. If run on the BBS machine, the BBS must be taken down on a timed event to process mail.

Major Gateway/Internet receives messages from the BBS either directly or via MHS, and queues the messages and prepares them for transfer. Then, using UULINK software from Vortex Technologies, it dials out and connects to any UUCP host to transfer the outbound mail and receive incoming mail.

"The Internet is the most pervasive message network on the face of the earth right now," says Scott Brinker,

Vice President of Galacticomm. "The Major Gateway for Internet provides a convenient and affordable way for the thousands of Major BBS Sysops to offer their users access to the most popular Internet services."

Major Gateway/Internet is available for \$199 directly from Galacticomm. Galacticomm, Inc., 4101 SW 47th Ave., Suite 101, Fort Lauderdale, FL 33314; (305)583-5990 voice; (305)583-7808 BBS; (305)583-7846 fax.

PRACTICAL PERIPHERALS SYSOP UPDATE

Practical Peripherals, a subsidiary of Hayes, has spruced up their modem product line fairly substantially with a cute 14.4kbps pocket modem and an under \$300 fax port for Laserjet printers. As of February 5, they've also lowered sysop prices on their PM14400FXSA modem to \$250 from the list price of \$549 and likewise dropped the price of the PM14400FXMT to \$200 compared to the list price of \$399.

The goal is simple: To increase the access and profitability of your BBS, and do it in an easy, economical way.

The answer is simple: Work with a network carrier who has the technology and resources already in place to make it happen right now . . . at the lowest price.

Utilizing its X.25 packet-switched network, the ADP/Autonet Division can help a sysop become a nationwide, or even international, business practically overnight. Autonet provides the PDN (or VAN) needed to transmit data for the BBS. It literally puts ADP's network to work for the sysop.

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Both modems support 14,400 bps V.32bis data connections and 14,400 bps V.17 fax connections. Data compression/error correction is provided using the now ubiquitous V.42/V.42bis. And they both come with **QuicklinkII** fax/terminal software and a lifetime warranty. But these modems also incorporate CALLER ID. The main difference between the two models is that the pricier PM14400FXSA is a small tower model sporting a 12-character LCD readout that displays various connect status activities in English. The PM14400FXMT is a more conventional modem configuration with LED indicators.

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Practical Peripherals New PM14400FXSA

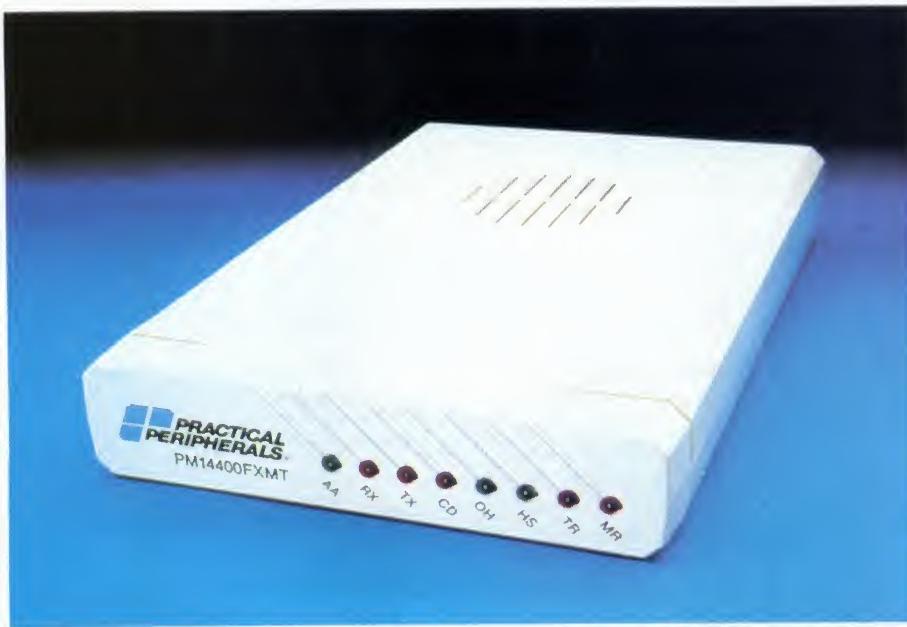
day. The modem and shipping is charged to your credit card. When you return the faulty unit, the credit card is credited with the modem cost. So you get an overnight replacement for the cost of shipping. The program is detailed in the file 144SYSOP.ZIP in library 15 of the Practical Peripherals support BBS

at (805)496-4445. Practical Peripherals, Inc. 375 Conejo Ridge, Thousand Oaks, CA 91361; (805)497-4774 voice; (805)374-7200 fax.

FRACTERM/CARDZ MARINE CLOSES DOORS

Cardz Marine Co. went out of business last month after stirring quite a bit of interest in their FRACTERM fractal graphics compression technology. FRACTERM allows the transmission of photo-realistic bit image graphics files online by dramatically compressing the file sizes - at some significant loss in image quality.

Dwight Jones has retained the technology and formed a new company titled IMAGEN to develop and market the FRACTERM product. According to Jones, "We had to get out of the hardware business and we are now entirely focused on this technology. IMAGEN is the sole company involved and FRACTERM is one of its products." IMAGEN, Inc., 504-1168 Hamilton Street, Vancouver, BC V6B 2S2; (604)687-7511 voice; (604)687-1030 demo BBS (logon as FRACTERM).



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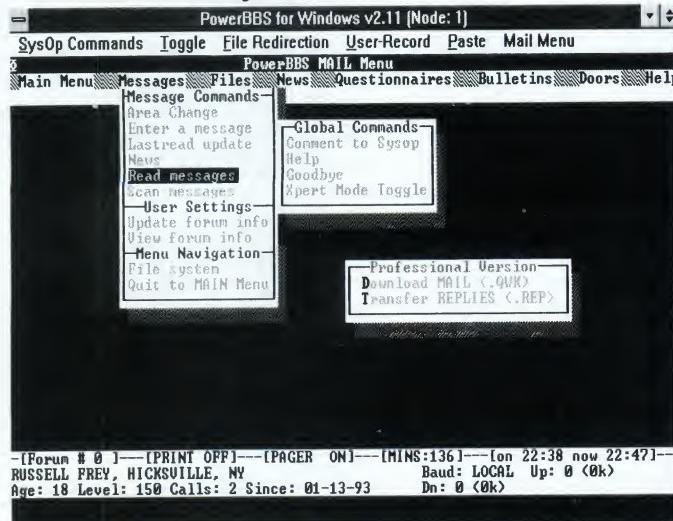
Editor's Choice: ZyXEL U-1496E
German Edition, 4/92

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Comparison chart was completed in May, 1992.

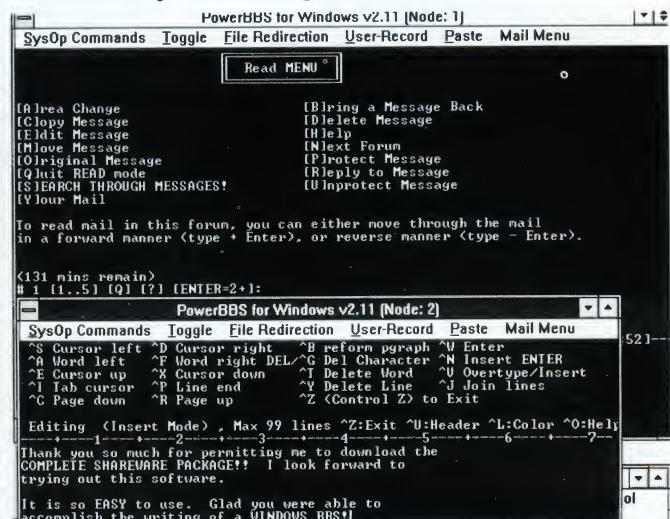
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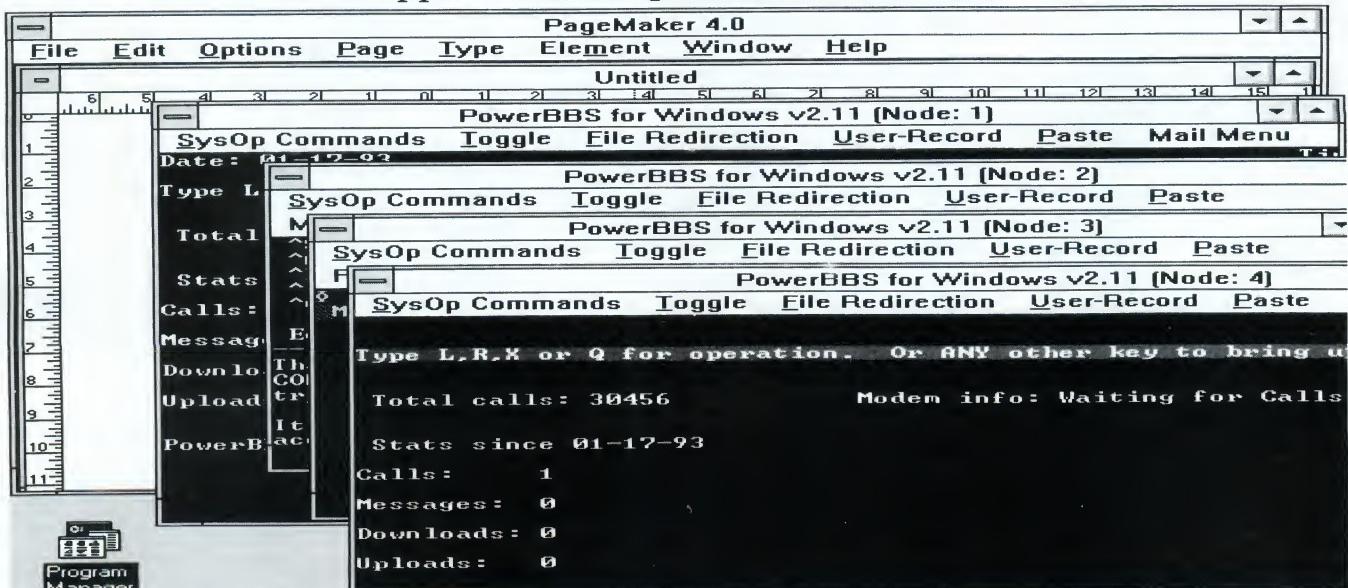
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FILES FROM THE FBI - BULLETIN BOARDS AND BADGES



RUSTY & EDIE'S BBS SEIZED BY THE FBI

Rusty & Edie's BBS touted the fact that they had only two rules: 1. Have fun and 2. No More Rules. It would appear they are going to soon add a third rule to their operation - No Commercial Software.

After several years operating as the biggest open secret in BBSland, the 124 line BBS operated from the home of Russell And Edwina Hardenburgh in Boardman Ohio was raided by the FBI. On Saturday afternoon, January 30, FBI agents presented Rusty with a search warrant. Approximately 130 personal computers, modems, LAN cabling, software packages, and subscriber records were seized as evidence and hauled away - essentially terminating all operations.

Claiming some **14,000** subscribers to a system sporting a registration fee of some **\$89** per year and **124** access telephone lines, Rusty & Edie's was one of the nation's largest bulletin board systems. They claimed some **3.4 million** calls since going online and were receiving some **4000** calls daily when the system went offline. The system featured over a **100,000** shareware files on 19 Gigabytes of file storage. They

were charged with distributing copyrighted commercial software on their BBS. And while the Software Publishers Association (SPA) was quick to step forward and take credit for the FBI action, it was actually quite late on the scene with this one. And therein lies a tale.

Five years ago, Bob Fairburn had a heart attack. A restaurant manager in Kansas with a wife and children, Fairburn could not obtain life insurance and was assured by doctors that he had a life expectancy of five years or less. He pondered for months on how he could somehow assure his family an income after his death. And he decided that there were two things a man could do in America to generate ongoing income - write a book or invent something.

So he set out to write the Great American Novel. After months of effort, he read through his manuscript and decided even he wouldn't buy it. So he cast about for something he could invent. But again, he found he just didn't have the inspiration to be an Edison. His son had a small personal computer and was already writing games in BASIC. Fairburn took a look at it and decided this was something he could do.

He bought every book he could find on computer programming, and he signed up on Bob Mahoney's Shorewood Wisconsin EXEC-PC BBS. He downloaded hundreds of files from the BBS containing code fragments, examples, programming tutorials, and anything he could find on programming. Starting in BASIC, he eventually moved on to PASCAL. And he came up with an idea for a program. He called it HOME DESIGNER and it was basically a simple CAD package to design home floor plans, place and arrange furniture, and try out various designs for your home or office.

Fairburn decided shareware wasn't the way to go to generate cash. So he solicited software distributors for months. Eventually, a company in Florida called Expert Software picked up the title and launched **Expert Home Design** - at the staggering price of **\$14.95** retail.

According to Fairburn, he only gets fifty cents for each copy sold, but the pro-

gram caught on and he reached the point that he was making a living. He bought a farm outside of Leavenworth Kansas and to get needed physical exercise, began clearing it and converting it into a wildlife park. He hired an assistant, and continued software development.

About a year ago, he dialed his old haunt at Bob Mahoney's EXEC-PCBBS, and there was his commercial software program listed in the download directory with BBS callers downloading it madly. Stunned, he called Bob Mahoney voice and asked him about. Mahoney immediately apologized and removed the file from the directory. In examining the file, they found a small file in it advertising that it came from Rusty & Edie's BBS. Mahoney explained that sometimes callers are confused by the difference between shareware software and commercial software and in an effort to contribute something, they upload commercial software to bulletin boards sometimes without realizing the impact. "Most BBS operators will remove it immediately if you call their attention to it," Mahoney assured him.

So Fairburn dialed Rusty & Edie's BBS and did indeed find his program available for download there as well. He selected the editor and began drafting a message to the sysop explaining the situation and asking that the file be removed. According to Fairburn, while he was typing the message, Rusty broke into real-time chat and rather rudely told him that he wasn't responsible for every file that anybody uploaded to the BBS, that they received megabytes of file uploads each day, and that he would remove the file whenever he felt like it and got around to it.

Despite the harsh tone, Fairburn accepted this explanation. But when he called a week later, the file was still there.

"Understand," explains Fairburn, "I'm not Bill Gates. I only get fifty cents per copy sold, and my family depends on this for a living. This guy was running a giant bulletin board and taking in lots of subscriptions, and basically he was stealing my software. I just got mad about it."

Fairburn called the FBI office in Kansas City and complained. They were quite nice but not very helpful during the call. But about a month later, Fairburn answered a knock on the door to find an FBI agent on the front porch - there to investigate his problem. Fairburn took the agent into the den and logged onto Rusty & Edie's BBS. They logged the session to disk and he showed him not only his own program in the directory, but copies of Borland's Software, Novell's LAN software, a number of Microsoft programs, Quicken, and according to Fairburn, "virtually every commercial game program made."

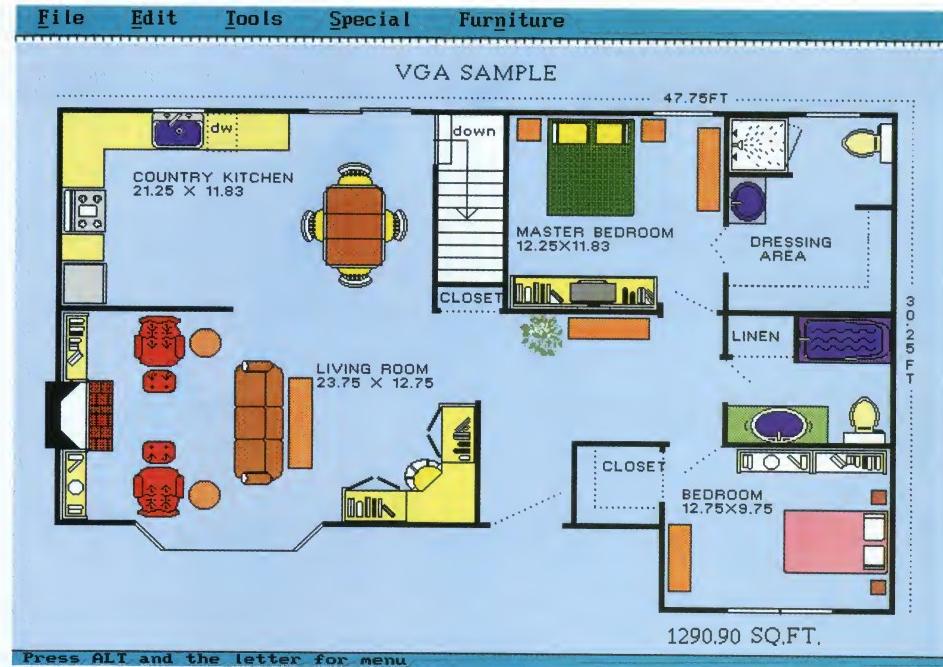
Fairburn was discouraged to learn that the agent knew nothing about computers. But he gave him a disk with the logged session on it, some files they actually downloaded, and a copy of PKZIP so he could extract the files. He patiently explained what PKZIP did, and why it needed to be done. The agent thanked him and left - telling him they would turn it over to their Cleveland office.

Last October, nearly six months after the initial contact, the FBI contacted Fairburn to ask if he would be willing to fly to Ohio at their expense to testify against the Hardenburgh's in the event they decided to prosecute the case. Fairburn agreed as long as they would cover his travel expenses.

He had also notified the publishing company that distributed his software. And apparently they did contact the SPA. The FBI had apparently contacted several of the other software vendors whose programs were found in the log files, and they had in turn contacted the SPA - ergo the SPA involvement.

On January 30th, the FBI served a search warrant on Rusty & Edie's BBS, and essentially trucked it away - an estimated \$200,000 worth of computing equipment.

The bust has evoked mixed reactions online. While the eternally concerned on the Internet were outraged by the Constitutional implications, competing BBS operators were not quite so



Press ALT and the letter for menu

adamant. According to Kevin Behrens of Aquila BBS, a 32-line PCBoard system in Chicago, "Rusty Edie's was the worst-kept secret in the industry. I don't know if it's a shame or about time."

Bob Mahoney of EXEC-PC was a bit more direct. "In some ways, this is a competitive situation and every honest sysop is at a disadvantage. Imagine operating a car wash with a competing car wash across the street. The difference is that they give away a \$20 gold piece with each car wash, but you aren't allowed to because it is against the law."

Mahoney went on to note, "There's also something a bit annoying about computer people (BBS operators) ripping off other computer people (software authors). It's a bit like cannibalism within the family. I have a problem with that."

Hardenburgh refused to comment on the situation noting the usual advice of his lawyer not to discuss the case. "I will say I never thought something like this could happen in America and I'm shocked and very disappointed." Hardenburgh vowed to have the system back up on new equipment by March 1 at the (216)726-1247 number,

and expressed his hope that "his caller base would back him on this one."

"When this is all over, I want to come out to that ONE BBS CON in Colorado and tell you all an earful. You're not going to believe what can happen to a BBS," vowed Hardenburgh.

The situation may be further complicated by a recent change to the copyright law, ostensibly driven by the SPA. On October 28, 1992, the 102nd Congress passed **Senate Bill 893** - which became **Public Law 102-561** revising **Title 18 of the United States Code**. Under Section 2319(b) of title 18, the criminal penalties for copyright infringement were dramatically changed. Previously, anyone making **1000** copies or more of a copyrighted work were eligible for the maximum penalty. Under the revision, that is reduced to anyone making **10** or more copies with a retail value exceeding a total of **\$2500** or more within a **180-day period**. If found guilty, they may be subject to sentences of up to five years and fines of up to **\$250,000**.

As of this writing, Hardenburgh has not been charged with any crime. Thomas F. Jones, Cleveland special agent-in-charge noted in a statement that the Youngstown FBI did serve a search warrant on Hardenburgh's home Janu-



Russell and Edwina Hardenburgh

ary 30th. The warrant alleges the couple illegally distributed copyrighted computer software programs to bulletin board subscribers without permission of copyright owners. There was apparently no implication of pornography.

And Fairburn? Well, he's exceeded his five year projected life span and seems to be doing reasonably well from a cardiac perspective. He did drop a piece of a tree on his arm with a ladder in January and has a bit of a problem with his arm. But his Expert Home Designer was extremely well reviewed in the After Hours column of PC Magazine's August '92 issue, and while at \$14.95 it's not one of the big dollar generating software packages, numerically it is the 17th fastest selling software package in America. It's discounted to as little as \$7.95 in grocery stores and apparently the country wants to rearrange their furniture on screen. The program is available from Expert Software, PO Box 143376, Coral Gables, FL 33134; (800)759-2562 voice; (305)443-3255 fax. Bob Fairburn can be reached at 1004 2nd Ave., Leavenworth KS, 66048; (913)651-3715 voice.

Other BBS operators are concerned by

the implications of the raids. Typically, any BBS is subject to receiving uploads of commercial software from callers. And while most do a very good job of screening out the obvious Microsoft Word or Lotus 123 program, there are tens of thousands of commercial programs like EXPERT HOME DESIGNER that aren't immediately obvious in an environment that also includes over 100,000 shareware titles that are perfectly acceptable to carry online.

Most attempts by conscientious system operators to automate the task of separating commercial software from shareware software have had very limited success. Typically, search software examines uploaded .ZIP files to detect content files with a certain 32-bit Cyclic Redundancy Check (CRC) signature. But these signatures have not proven to be reliable or unique. Andy Keeves of Executive Network BBS in Mount Vernon, New York, has devised what may be the beginnings of a solution. A database has been compiled using the FWKCS "Content Signature" system made available by Dr. F.W. Kantor of New York with the cooperation of sev-

eral software manufacturers. Kantor's system uses a 64 bit signature based on both a CRC of the file and the file length. This is proving significantly more reliable.

The Executive Network supplies a diskette with instructions to any software manufacturer on request in order to help them identify critical components of their work. When the manufacturer submits the generated "signatures" to the Executive Network, they are incorporated into a database. A software program automatically deletes any uploads containing one of the registered signatures. Software manufacturers can request the identification software by contacting Mr. Black at Executive Network voice (914)667-2150 or by modem at (914)667-4567. There is no charge for either the diskette or the service. BBS operators will be able to download the database for their own use at no charge. According to Keeves, the database already contains several thousand signatures.

Executive Network is one of the largest bulletin boards in the country with over 12 GB of files online, international e-mail, and vendor support areas. The Executive Network Information System, 10 Fiske Place, Mount Vernon, NY 10550; (914)667-2150 voice; (914)667-4567 BBS; (914)667-4817.

BUST TWO - OFFWORLD BBS SEIZED IN ST.LOUIS

Joey Jay operated one of the more popular bulletin board systems in the St. Louis area. **Offworld BBS** operated on 32 telephone lines at (314)579-0700 using the DLX software popular among real-time chat systems. It gained quite a following as a local chat system. Jay, 28 years old, operated the system from the basement of his father's home in Chesterfield Missouri. Some 4300 local callers frequented the system.

On Friday evening, January 15th, at about 8:52 PM CST, the FBI served a search warrant and seized six computer systems, modems, all tape backups, - some \$40,000 worth of computer hardware and software in all - on suspi-

cion of interstate distribution of child pornography and images containing bestiality.

According to Jay, there were images occasionally uploaded to the board as file attachments on private e-mail between callers. When he would detect them, he did delete them as a matter of practice and kick the caller off the system. He routinely tossed them into a SHREDME directory for later deletion with Norton's WIPE utility. He acknowledges that there were some questionable images in the SHREDME directory when the computer equipment was seized and notes he's not certain what was on the BBS as he had just returned from a week of snowboarding in Colorado when the raid occurred. He did maintain a regular file directory containing images of bestiality and was unaware it was against the law to do so.

In addition to the equipment seizure, the FBI alluded to the fact that if the system came back up, they could, under law, seize Jay's father's house. His father asked Jay to move out of the premises.

About 100 angry Offworld users gathered the following Monday at a support rally. Jay is receiving contributions of equipment and money to get the system back online and plans to do so soon. He has a one line message system up at the old number now. Jay originally started Offworld in Los Angeles where it operated from February of 1984 until June of 1992, when he moved it to the St. Louis area. He has retained Arthur Margulas, an ex-FBI agent and federal crime attorney practicing in St. Louis to represent him, and has been in close contact with Mike Godwin of the Electronic Frontier Foundation.

STEVE JACKSON GAMES vs. U.S. SECRET SERVICE - TRIAL

On March 1, 1990, the United States Secret Service, participating in a nationwide sweep code named Operation SunDevil, launched an early morning raid on Steve Jackson Games, an Austin Texas publisher of role-playing games and books. They broke locks on doors, seized and carted away all per-

sonal computer equipment, business records, manuscripts of books being prepared for publication, and all hardware and software of the Illuminati bulletin board system run by SJG at (512)447-4449 to communicate with writers, customers, and fans of the game series published by Jackson. Steve Jackson arrived at work to find his business already loaded and ready to roll. Agents on the scene refused to answer any questions, and they presented a search warrant with essentially no information on it.

With his business records, computers, and manuscripts gone, Jackson laid off workers in an effort to stave off bankruptcy. No charges were filed against Jackson, and months of appeals to have the equipment and records returned met with very limited success. In May, 1991, with the assistance of the Electronic Frontier Foundation, Steve Jackson and the EFF filed a civil suit against the United States Secret Service, Secret Service Agents Timothy Foley and Barbara Golden, Assistant United States Attorney William Cook, and Henry Kluepfel.

The case finally came to trial on Tuesday, January 26, 1993 at about 1:00 PM in the U.S. District Court with Judge Sam Sparks presiding. Attorneys Jim George and Pete Kennedy represented the plaintiffs. Their first witness was agent Timothy Foley of the Secret Service. He acknowledged that he did know that e-mail was on the BBS menu system, and explained that he refused to give Jackson copies of anything that was on the BBS because he feared it might be "booby-trapped." Although it was widely reported that he had told Steve Jackson at the time that GURPS Cyberpunk, a fictional game published by SJG, was a "handbook for computer crime." When questioned under oath, he denied ever making such a statement. He also denied any knowledge that Congress had granted special protections to publishers during searches under the Privacy Protection Act.

Larry Couterie, a University of Texas police officer was called to the stand next. An affidavit filed by Foley to support the search warrant application indicated that Couterie had provided

the Secret Service with the business address of one of Jackson's employees. Under questioning, Couterie denied knowing anything about the employee, or providing any such information to Foley.

Steve Jackson demonstrated for the court the operation of a BBS, demonstrating a message conference with an old west theme. By all accounts, the demonstration was quite entertaining and the judge seemed to enjoy it.

The next day, the plaintiff's continued their case with testimony by writers who submit manuscripts to SJG, and by e-mail users of the BBS. Apparently, over 160 electronic mail messages were never delivered due to the government seizure of the system, and of course much was made of the impact on the individuals lives due to messages they thought they had sent, but had never actually been received, etc.

Wayne Bell, author of the WWIV software used on the Illuminati system, testified after examining the BBS. This testimony was used to show that Secret Service had indeed read all the mail on the BBS system with numerous files updated weeks after the raid.

Much of the original warrant was based on information from Henry Kluepfel, Director of Network Security Technology at Belcore. His testimony at the trial did more to explain what actually happened to lead to the raid. Apparently, they suspected a BBS titled the Phoenix Project, operating in Austin, of having a copy of an E911 document stolen from a computer in Atlanta. Their information led them to believe the Phoenix Project was operating from the home of Loyd Blankenship, an employee of Steve Jackson Games. But after February 7, 1991, the Phoenix Project couldn't be located - it's telephone number didn't answer. Since Loyd Blankenship worked at Steve Jackson games, and since Steve Jackson Games ran a BBS titled Illuminati that used the same WWIV software, they decided that the Phoenix Project was actually hidden behind a "secret door" on the Illuminati BBS. A comparison of the userlogs of the two bulletin boards indi-

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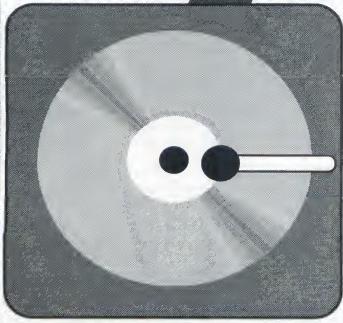
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cated there was only a single common user to both systems - Loyd Blankenship.

William Cook, retired U.S. Attorney testified at the trial and made a couple of interesting comments. He indicated that no charges were ever filed against Loyd Blankenship. A good bit of this testimony revolved around SJG role as a publisher and the abrogation by the Secret Service of any observance of the Privacy Protection Act procedures for serving search warrants on publishers. One of the most interesting aspects of Cook's testimony involved the status of electronic mail. He asserted that e-mail messages that had been sent, but not received, were not in transit electronic mail but rather "stored" electronic mail. The judge questioned him on this point and he acknowledged he had based this interpretation on nothing beyond his own view of the subject.

The government only made a half-hearted attempt at defending its position on the raid. Most of their activity centered on damage control - seeking to disqualify the \$2 million in damages and \$150,000 in lost royalties claimed by the plaintiff. They contended that Steve Jackson games had actually been in financial difficulties for several years before the raid and implied that the publicity caused by the raid actually helped his business. By Thursday, the judge had had enough. He interrupted testimony to deliver a 15-minute tirade

directed at Secret Service agent Timothy Foley consisting of a series of "Didn't you know/Didn't you ask" questions that amounted to a public scolding.

Shaken, the government rested their case without calling any of their scheduled remaining defense witnesses.

While the trial was dramatically one sided on behalf of Steve Jackson Games and the EFF, and decidedly embarrassing for the Secret Service and the U.S. Attorney, the outcome is unsettled. The judge took the matter under advisement and at this writing, has not issued a ruling in the case. The EFF, with SJG, is seeking to establish several things. First, that the Electronic Communications Privacy Act ensures the privacy of electronic mail from government seizure without warrants served to each e-mail correspondent. Secondly, SJG as a publisher is entitled to special protection under search warrants under the Privacy Protection Act. And third, that SJG is deserving of monetary damages from the business disruption caused by the search. All of these are relatively dramatic goals that would alter how the government deals with bulletin boards in the future. And despite the one-sided appearance of the trial, Judge Sparks ultimate ruling could deal with any of these elements as he sees fit.

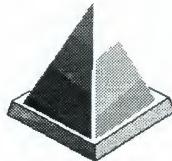
BOARDWATCH 100 READER'S CHOICE CONTEST UPDATE

Ballots continue to pour in for the Boardwatch 100 Reader's Choice BBS Contest. As of the first week in February, some 3652 ballots have been received.

The contest allows callers to nominate bulletin boards as their favorite by sending in a ballot via fax or mail. The winners will be announced at the Online Networking Exposition and BBS Convention (ONE BBS CON) scheduled for August 25-29th at the Broadmoor Hotel in Colorado Springs Colorado. Some 2000 BBS enthusiasts are expected at the event. The top 10 bulletin boards will be awarded trophies at a special ceremony and the list of the top 100 bulletin boards in the country will be unveiled at that time.

Additionally, six random ballots will be drawn for modem prizes. ZyXEL USA has contributed two U-1496 modems to the contest. Additionally, Hayes Microcomputer Products has contributed two Hayes Optima 144+Fax models and U.S. Robotics has contributed two Courier Dual Standard models to the contest. Six ballots will be drawn in a random drawing from all valid ballots received and the modems awarded at that time. Voters need not be present at

AGE	TOTAL	%	GENDER		WINDOWS		EXTRA LINE		AVERAGE CALLS	AVERAGE MONTHS ONLINE
			Male	Female	Yes	No	Yes	No		
UNDER-10	4	0.1	3	1	1	3	1	3	9	20
10-TO-19	333	9.1	301	32	170	163	114	219	94	44
20-TO-29	858	23.5	731	127	477	381	299	559	112	48
30-TO-39	1140	31.3	980	160	656	484	413	727	63	48
40-TO-49	889	24.3	782	107	497	392	332	557	65	57
50-TO-59	284	7.8	254	30	146	138	103	181	53	59
60-TO-69	115	3.1	103	12	52	63	34	81	45	63
OVER-70	29	0.8	24	5	11	18	5	24	40	47
TOTAL	3652	100	3178	474	2010	1642	1301	2351	76	51



BOARDWATCH

MAGAZINE



1993 READER'S CHOICE BBS CONTEST

Boardwatch Magazine is sponsoring a contest to find the 100 most popular bulletin board systems in North America - and the ONE BBS most popular among callers. The contest will run from January 1, 1993 through July 1, 1993. Winners will be announced at the **Online Networking Exposition and BBS Convention (ONE BBSCON)** held at the **Broadmoor Hotel in Colorado Springs Colorado, August 26-29, 1993**. The Boardwatch 100 list will be published in subsequent issues of Boardwatch Magazine and distributed in electronic form world-wide.

PRIZES FOR BULLETIN BOARD OPERATORS

1ST PRIZE: The BBS system receiving the largest number of valid ballots will be named the most popular BBS. A trophy will be awarded to the top BBS at the **Online Networking Exposition and BBS Convention (ONE BBSCON)** held August 26-29th, 1993, at the Broadmoor Hotel in Colorado Springs, Colorado. Additionally, the winning BBS will receive air fare, hotel accommodations and registration at ONE BBSCON for the primary BBS operator as the guest of Boardwatch Magazine. Additionally, the system will be featured on the cover of Boardwatch Magazine with an accompanying feature length story about their system and a free full-page black and white advertisement in Boardwatch Magazine for a period of three months.

TOP TEN: The ten most popular bulletin boards selected by the voters will each receive an award trophy at on their system in Boardwatch Magazine, inclusion in a special top ten BBS listing in the magazine, and a free quarter-page black and white advertisement in three successive issues. Additionally, they will be listed in the Boardwatch 100 BBS list.

TOP ONE HUNDRED: The 100 bulletin boards receiving the most votes will each be listed in the Boardwatch 100 readers choice BBS list. This list will be published in Boardwatch Magazine and freely distributed electronically on thousands of bulletin boards world-wide.

IN CASE OF TIE. Positions for which an identical number of votes are received will be determined by point value established by the date stamp assigned to each received ballot. Time/Date stamp values are accumulated for all votes and a cumulative score assigned to each BBS based on date of receipt of ballots. Votes receive a date stamp value between 1 and 180 based on the day of the contest the vote is received. System with lowest (earliest) cumulative date stamp score will prevail in event of tie.

PRIZES FOR VOTERS

All valid ballots submitted by voters will be entered in a random sweepstakes drawing. As of the opening date of this contest, prizes include two U.S. Robotics Courier Dual Standard 16.8K Modems, two Hayes OPTIMA 14400 + FAX 144 modems, and two ZyXEL U-1496 14,400 bps modems - and more are on the way. A minimum of six valid ballots will be selected from all entries and each will receive a free modem - from the most popular modem manufacturers in the world.

RULES FOR CALLERS

Each voter can vote once, for a single bulletin board system. Each ballot must be fully completed, and individually mailed by each voter. We will verify ballots as necessary. There are three ways to vote:

1. Complete this ballot and mail to: **BOARDWATCH MAGAZINE, READERS CHOICE BBS CONTEST, 5970 South Vivian Street, Littleton, CO 80127**

2. Complete this ballot and **FAX** to **(303)973-3731**.

3. Or, dial the Boardwatch BBS at **(303)973-4222** and complete the online ballot provided on the main menu.

Balloting closes at 23:59:59 on June 30, 1993. Last year it ended at midnight on July 1 and caused all manner of grief and confusion so we're cutting a second off of this year's contest.

This contest is not limited to Boardwatch Magazine subscribers, and no purchase of anything is required to participate in this contest. Reasonable facsimile's of this ballot are acceptable, so long as all specified information is included.

We held this contest during 1992 and it generated 11,152 votes by the close of balloting for some 1250 different bulletin boards. The TOP system received about 450 votes. Your individual vote can have a tremendous impact on the outcome of this contest. Further, the odds of winning a modem in last years contest, were 1 in 1394. You won't get those odds in the lottery.

TITLE OF BBS YOU VOTE FOR AS THE BEST: _____

PRIMARY BBS ACCESS TELEPHONE NUMBER: _____

VOTER NAME: _____ VOICE PHONE NUMBER: _____

STREET ADDRESS: _____

CITY: _____ STATE: _____ ZIP CODE: _____ COUNTRY: _____

PRIMARY COMMUNICATIONS SOFTWARE YOU USE: _____

PRIMARY MODEM MANUFACTURER AND MODEL: _____

HIGHEST SPEED YOUR MODEM SUPPORTS: 1200bps 2400bps 9600bps 14400bps 19200bps

DO YOU USE MS WINDOWS (Y/N): _____ DO YOU HAVE A SECOND TELEPHONE LINE FOR USE WITH YOUR MODEM (Y/N): _____

TOTAL CALLS YOU MAKE TO BBS PER MONTH: _____ WHEN DID YOU MAKE YOUR FIRST BBS CALL (MM/YY): _____

AGE: _____ SEX (M/F): _____ PROFESSION: _____

SIGNATURE: _____ DATE: _____



U.S. Robotics Courier HST Dual Standard With Fax



Hayes Optima 144 + FAX 144 Modem



ZyXEL U-1496 Modem/Fax

the convention to win. Last year's contest resulted in 11,152 ballots.

A number of statistical questions were asked on the ballot and some interesting results are appearing as we now have a base of some 3652 ballots to look at. The accompanying table summarizes current statistical results. One of the questions asked how many calls the voter made to bulletin boards per month. On average, callers claim to make some 76 calls to bulletin boards per month - more than twice per day. Callers in the 20-29 age group were highest with some 112 calls per month. It was apparent in every age group that the people voting in this contest are not just casual bulletin board users, but do it with some enthusiasm.

We also asked how long they had BEEN calling bulletin boards. Again, the results were surprising. On average callers made their first call online some 51 months ago. Some 31.3% of voters were in the 30 to 39 age group. Some 55% of callers use Microsoft Windows. Some 35.6% of callers have installed a second telephone line for data communications.

The one thing that holds continuously constant is the percentage of male to female callers. BBS dialing continues to appear to be a male sport with 87% of callers claiming that gender, with 13% female. Of females online, the largest percentage of them appear to be age 30-39 as well.

Given the distribution curve of ballots received last year, it would appear our estimate of 30,000 ballots in this year's contest is quite on track.

There have been some oddities already. We are now receiving some 3-4 ballots per day now by registered or certified mail. Haven't a clue as to why but it allows someone in the office to chat a bit with the mailman each day. Since our mail man is a mail woman, this is not entirely unpleasant, we just don't know why people are mailing ballots at the expense of registered or certified mail.

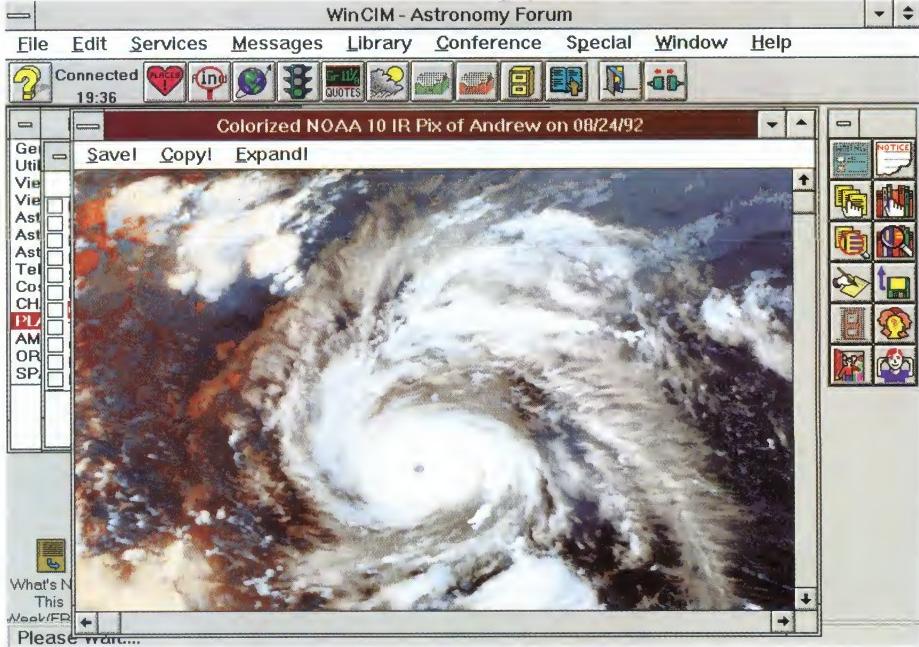
COMMERCIAL SYSTEMS

COMPUSERVE DROPS PRICES - RELEASES WINDOWS INFORMATION MANAGER

CompuServe Information Services has announced a long overdue drop in connect-time pricing - combined with an increase in the basic monthly service charge. Effective February 28, 1993, their Standard Pricing Plan will increase the monthly access charge from \$7.95 to \$8.95. But the hourly connect charges will drop some 37% to \$8 hourly for 1200 and 2400 bps access and \$16 hourly for 9600 bps access. Access to many basic services such as electronic mail and a number of news services continues free of connect-time charges.

The Alternate Pricing Plan involves a lower \$2.50 monthly charge, but connect time remains at \$12.80 per hour for 1200/2400 bps access and \$22.80 for 9600 bps connections. The new pricing is expected to increase the percentage of callers opting for the Standard Pricing Plan.

CompuServe has also released a new version of the CompuServe Information Manager (CIM) software program. WinCIM 1.01 is now available and can be downloaded from the system for a



charge of \$10 by entering GO WINCIM from any prompt. The \$10 is actually rebated in the form of \$10 worth of connect time. The product consists of two files, DISK1.EXE and DISK2.EXE - each about a megabyte in size.

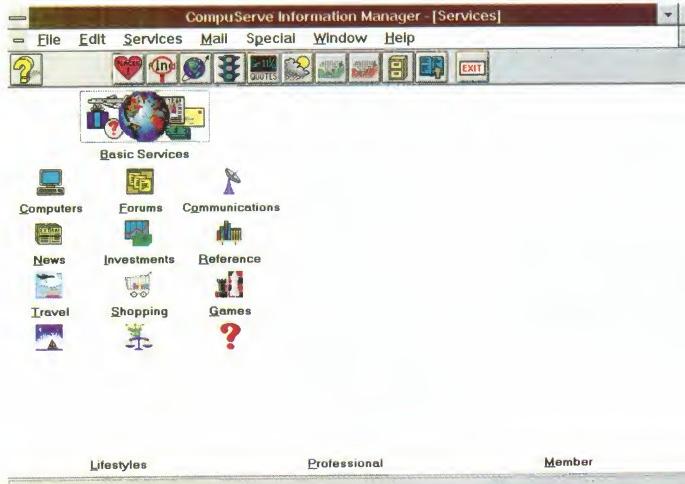
WinCIM is a Microsoft Windows application that may provide one of the more advanced interfaces in the business. Icons represent various online services, and the program features a very nice help function, directory of services, address book, etc. GIF images and weather maps can be viewed as they are downloaded.

The program is not flawless. When we tried to print our mail out to either of two different printers, it locked up the entire machine rather hopelessly. And it does not offer the offline mail features of TAPCIS or OZCIS. But it does provide a very usable interface to the

CompuServe service. CompuServe now claims some 1.1 million members and approximately 100,000 CIM users accessing some 1700 online services. The service was established in 1979. CompuServe Incorporated, 5000 Arlington Centre Blvd., PO Box 20212; Columbus, OH 43220; (614)457-8600.

INTERNET ACCESS AT \$3 PER MONTH - DELPHI MAKES THE GLOBAL CONNECTION

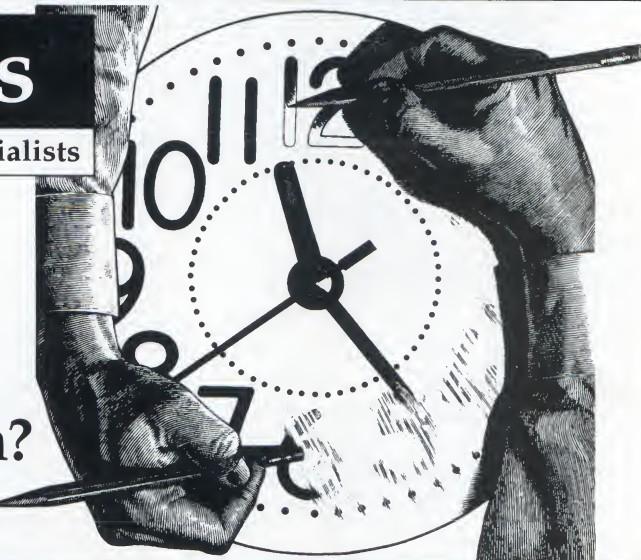
The Internet has very nearly outgrown its status as a network and become a metaconcept subsuming everything in its path. Virtually all the commercial online services, with the lone exception of Prodigy, have established e-mail gateway connections to the global network. And Prodigy ostensibly is only wrestling with how to make the sometimes indecipherable vagaries of the Internet interface rational to their largely novice user base. But these gateways generally allow only individual e-mail messages to pass to an Internet address. And while many users are joining mailing lists that work with these gateways, they are unable to participate in such services as Gopher, Archie, WAIS, Directory Databases, and the much richer world of Internet services available by



GW Associates

Communications and Information Systems Specialists

Are You Losing Time Setting Up Your Business On-Line Information System?



INSTALLING COMMERCIAL BBS SYSTEMS IS OUR ONLY BUSINESS

The Only Choice in Telecommunications

GW Associates was formed several years ago to promote and support the growing need for Information Management systems (BBS). Our goal has always been to make communications easier. We've always had the opinion that many seem to work very hard to make "telecommunications" some kind of mystery, a gray area where common man should never wander. And it really can be made simple. We'll be happy to show you how!

Muti-User Environments

Our ONLY business is telecommunications. We install commercial information management systems, we install telecommunications networks linking offices across the country using personal computers and inexpensive automated software. And we sell everything from single line TBBS software to 64 line "plug and play" packages.

Cost Effective

We remotely maintain commercial BBS systems. It's a good bet that you have never hired an employee to be a System Operator. And any time that an employee spends in the design and maintenance of a system is taking time away from the work that employee was hired to do! What happens when the employee is promoted, transfers or resigns? Can you afford to hire and train, or take another employee away from assigned tasks? We can support your TBBS system remotely at what might be a lower cost than what you will pay for an employee benefits package, and we won't demand paid vacations or coffee breaks.

Attention All Programmers

While our main business is the sales and support of TBBS/TDBS systems we find we have all the necessary software in place to market and support any software, regardless of the market it is targeted to. If you have an MS-DOS based software package you would like to market, please give us a call. We know we can help you increase your income, we've been doing it for our associated TBBS/TDBS programmers for years! If you have a "user supported" software package and feel it can do better commercially we would like the opportunity to help you be successful. For more information just call!

Call Today For More Information

If there's anything we can do to help you make better use of any communications tool, please ask. If you're not sure if you really have a need for a system and want to know more, please ask. We're here to help in any way we can. We hope you'll give us the opportunity to help. If you need information on prices or just need information on communications, don't hesitate to ask for help. We enjoy what we do and we'll enjoy discussing your applications and needs.

System Support / Custom Programming

There's a lot available for the TBBS/TDBS System Operator, as well as for anyone interested in an Information System (BBS). If you want to learn more about TBBS/TDBS just call our system and register as a customer. GW Associates offers full support to all System Operators and we have over a dozen excellent programmers available to help with your applications and customizing of your system at a very reasonable cost. Please call our system at (508) 429-8385 (N,8,1) and keep up with our new releases or call us on our voice line at (508) 429-6227 if we can help you in any way. Installing and remotely supporting commercial systems is our ONLY business!



Call our Sales and Support BBS for full demonstrations on over 100 TBBS / TDBS add-on application, entertainment and utility programs.

TBBS / TDBS SYSTEM ENHANCEMENT SOFTWARE

TBill

TBill will track time used in a TBBS system by the separate billing classes available in TBBS and create invoices to bill your clients (users) for the time used on your system. TBill allows each TBBS billing class to be charged at a different rate, generates a simple generic invoice for your occasional billing needs, creates an ASCII file of all invoices for off-line printing, etc. Your entire monthly billing can be as simple as a 3 keystrokes.

GO-2 User Interface

GO-2 is the program for all who want or need a SIMPLE user interface. GO-2 has a "point and shoot" interface for ANSI users, all they need do is use the cursor keys to highlight the activity they want and hit the <Enter> key. It just doesn't get any easier! It can be used with or without menus and was designed to be extremely flexible and to allow SysOps to make the navigation of a BBS so simple that anyone can do it quickly and easily! No longer do you have to worry about whether your users and customers are "computer literate"! You could easily set up an entire system using only GO-2. Think of it, a TBBS installation with ONE menu and ONE call to GO-2! With TBBS, TDBS, GO-2 and the TBBS manual you can quickly easily install a complete system. And with the help files within GO-2 you might not even need the manual!

Simple NAPLPS Graphics Interface (SNAP)

With SNAP you can integrate NAPLPS (North American Presentation Level Protocol Syntax) graphics menu and file displays with all your standard TBBS menus. Using TBBS's {filename.ext} menu calls and macros for other menu directives, you can fully implement a NAPLPS graphics user interface quickly and easily. Simply edit and compile the included files. SNAP comes with sample .SDL, .QAL, .NAP, and all necessary NAPLPS initialization files. TDBS is NOT required.

Entertainment Software

We have dozens of games and other entertainment software available, including the all new The Wild Side (Interactive Adult Adventure), Video Poker, and Chain Links (an addictive word chain puzzle). If you are interested in arcade games, word games, games of chance or adventure games for your TBBS/TDBS system we have them at prices from \$29.95 to \$169.95.

Application and Utility Software

We are the recognized source for excellent TBBS/TDBS application and utility software with over 60 programs in our catalog and more being added every week!

Voice Phone (508) 429-6227 Data Line (508) 429-8385 Fax Line (508) 429-3859

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File Transfer Protocol (ftp) and telnet login.

The Delphi Online Service began offering full Internet access this past December, including real-time electronic mail, File Transfer Protocol (ftp), and telnet access out to other services on the Internet and becomes one of the very few large consumer online services to make the full connection. DELPHI currently sports about 100,000 users making it the fifth largest commercial service behind Prodigy, CompuServe, GEnie, and America Online. While CompuServe, GEnie, and AOL offer e-mail gateways, none of the four services offer a full Internet access to their callers at all.

According to Rusty Williams, DELPHI's general manager, "Prior to now, anyone interested in accessing the Internet had a very limited number of options. In most cases you had to be connected directly through your company or school. DELPHI is now an important low-cost access option available to home computer users. Anyone can connect to DELPHI with a local call from over 600 cities and towns throughout the US and in many foreign countries."

DELPHI's Internet gateway swings both ways. Callers to Delphi who access the service by direct dial, Sprintnet, or Tymnet can port out to any of thousands of services on the Internet. But Internet users can also access DELPHI by telnet to delphi.com to gain access to services such as Grolier's Academic American Encyclopedia, the Dictionary of Cultural Literacy, Reuters and UPI news services, stock quotes, travel reservations, real time conferencing, and multiplayer games as well as hundreds of Special Interest Groups (SIG) covering as many topics of interest.

DELPHI has also added the Internet SIG where members and staff can exchange useful information about use of the Internet. The SIG includes a discussion forum as well as downloadable files containing Internet access software programs, documents describing various services on the network, and guide books. And of course, DELPHI users now have an Internet mail box where they can receive mail.

DELPHI is currently one of the most aggressively priced commercial services offering two fairly reasonable pricing plans. The **10/4** plan costs \$10 per month and includes 4 hours of connect time with additional hours priced at \$4 per hour. The **20/20 Advantage Plan** is \$20 per month and includes 20 hours of connect free connect time with additional hours priced at a very attractive \$1.80 per hour. This is an exceptional value considering the local access from some 600 cities. Access using Sprintnet and Tymnet during peak business hours does involve a surcharge and **Internet access incurs a \$3 per month surcharge**.

Currently, DELPHI is also offering Boardwatch readers a unique trial membership program whereby prospective users can receive 5 hours of access at no charge. To participate in the program direct dial callers can call **800-365-4636**. On connect, press **ENTER** once or twice and at the **PASSWORD** prompt enter **BW34**. Internet users can access DELPHI to see what is available on the service by entering **telnet delphi.com**. At the login prompt, enter **JOINDELPHI** and at the **PASSWORD** prompt, enter **BW34**. Through either access method, callers will complete an online registration form, including credit card information, and receive five hours connect time. Subscriptions can be canceled with no further obligation if you don't wish to continue under the 10/4 or 20/20 plan. Both DELPHI and BIX are operated by General videotex Corporation, 1030 Massachusetts Avenue, Cambridge, MA 02138; (800)695-4005 voice; (800)365-4636 data.

APPLE VOTES FOR AMERICA ONLINE INTERFACE

Apple Computer, Inc. has given a big boost to one of the up and coming commercial online services - America Online, Inc. The company announced it plans to use AOL's interface for a future online service it is developing. The deal will ultimately bring some \$15 million into the AOL coffers starting with \$1 million Apple will pay this year to incorporate the AOL interface into enhanced versions of AppleLink, Apple's on-line

communication service. Apple will also pay royalties based on usage.

The deal involves a minimum of \$2 million in payments during 1994, with the minimum annual royalty rising to \$4 million by the fifth year for a minimum total package of some \$15 million that could, in reality, be worth as much as \$50 million. Additionally, Apple received warrants to buy up to 10% of AOL's stock at a price of \$25 any time during the five year period.

For the fiscal year ending June 30, 1992, AOL had revenues of \$26.5 million and a profit of some \$3.5 million. The company currently has a payroll of some 150 employees. The service sports about 180,000 subscribers, making it the fourth largest commercial service behind Prodigy, CompuServe, and GEnie. It trades on the NASDAQ under the symbol **AMER** and at this writing was trading at about \$27.50 per share.

Apple's own **AppleLink**, with some 50,000 current users, was originally started to allow Apple Employees and various suppliers, vendors, and developers to communicate. And many speculate that acquisition of the AOL interface technology is to make the service easier to use in preparation for opening the service up to a wider general audience. America Online, Inc., 8619 Westwood Center Drive, Vienna, VA 22182; (703)448-8700; (800)827-6364 info; Internet: info@aol.com

LOOKING AT SHAREWARE

By Jim Thompson
Western News Service

WNS—Microsoft Windows and associated programs have become the biggest news in PC software. For better or for worse, Windows programs are THE talk of the industry and the most demanded programs by end-users.

If you are running a bulletin board, you have probably seen your Windows shareware program section grow dramatically in popularity. If you want to

stay competitive, the trick is not to offer more programs, but to offer the best of what is currently available.

Here is a list of some of the Windows shareware programs that are among my favorites.

WINDOWS EDIT (WINEDIT)

We all have our favorite word processor and for most of us its a power and BIG program. But, sometimes you don't need or want to use the big gun for a small job. This is especially true if you are writing or editing program code, whether it be in dBase, C or even basic. What you want is something that is easy to use, quick to load, saves in Ascii text and, above all, is fast.

Windows does ship with Notepad and DOS 5 does have Edit, but, except for the simplest jobs, these programs are just too simple and bare.

One of the best shareware solutions is WINEDIT.EXE from Wilson WindowWare. It has one of the cleanest interfaces I have seen in any program, shareware or not. A button bar provides quick access the major features — and those features are impressive.

The program uses all available Windows memory allowing you to load up to 16MB of text files. The Multiple Document Interface allows an unlimited number of document windows.

For the programmer, WinEdit provides some impressive and sophisticated features. For example, you can run your favorite compiler or other programming tool from within WinEdit. It will even monitor the compiler's output and allow you to review any warning or error messages.

You also have full access to Windows SDK help and C 6.0 language help simply by clicking on any SDK or C language key word.

The search and replace feature is fast and efficient. You can also print half sized "two-up" pages side by side in landscape mode. As the documentation points out this is "ideal for source listings or early drafts of desktop publishing documents."

There is also the ability to add headers and footers to your documents and an easy to use Macro recorder. Add to this an extensive on-line help facility and you have one of the best shareware word processors available.

MEGA EDIT

If you are looking for something a bit less ambitious in a Windows editor, try Mega Edit from Computer Witchcraft, Inc. What makes this editor nice is its very simple design. There is nothing on the screen to clutter things up. Along the top is the typical Windows menu bar — along the bottom is a very useful "information bar."

The "information bar" displays the total number of lines in the file you are editing, the line number your cursor is presently on, the name of the file being edited and the amount of free memory

There is a nice search-and-replace facility and a "GOTO LINE" command that allows you to jump directly to any line in the file (great for making adjustments to your programming during the debug process).

One of the best features is that text can be imported or exported as ASCII, Macintosh or Unix text. This is a real winner.

PHONE CODE (PHCODE.EXE)

This is one of those nice little programs that doesn't pretend to do everything, but what it does do, it does well. PHCODE.EXE or Phone Code will find the area code for any city in the U.S.

You can search by area code or by city. If you know the area code and want to find the city just enter the numbers and up pops a list of the cities that share the code. If you need to find an area code, you can search by state and then city.

In addition to a list of cities, once the code is found the program also displays the time in the area code (Regional time), your local time, the difference between the two time zones, the name of the state, and even the region of the state (for example, 214 would show South East Pennsylvania or 805 displays South Central California).

WINZIP

If you have ever complained about having to remember all the command line switches of PKZIP, then this is the program for you. WinZip is actually a front end for PKZIP and makes compressing files with this utilities easy.

Besides doing standard compression, WinZip also allows you to look inside a ZIP file to read individual text files and to add or delete files from the archive.

CONTACT INFORMATION

Windows Edit (WINEDIT)

Wilson WindowWare
2701 California Ave SW #212
Seattle, WA 98116
Registration Fee: \$59.95

Mega Edit

Computer Witchcraft, Inc.
P.O. Box 210441
San Francisco, CA 94121
Registration Fee: \$35.50

Phone Code (PHCODE)

Dan Begallie
621 Griffith Road
Akron, Ohio 44312
(216)-745-2124
CompuServe: 73120, 41
Registration Fee: \$5.00 (Single User)

WinZip

Nico Mak
P.O. Box 919
Bristol, CT 06011
Registration Fee: \$29.00

Windows UnArchive (WUNA.EXE)

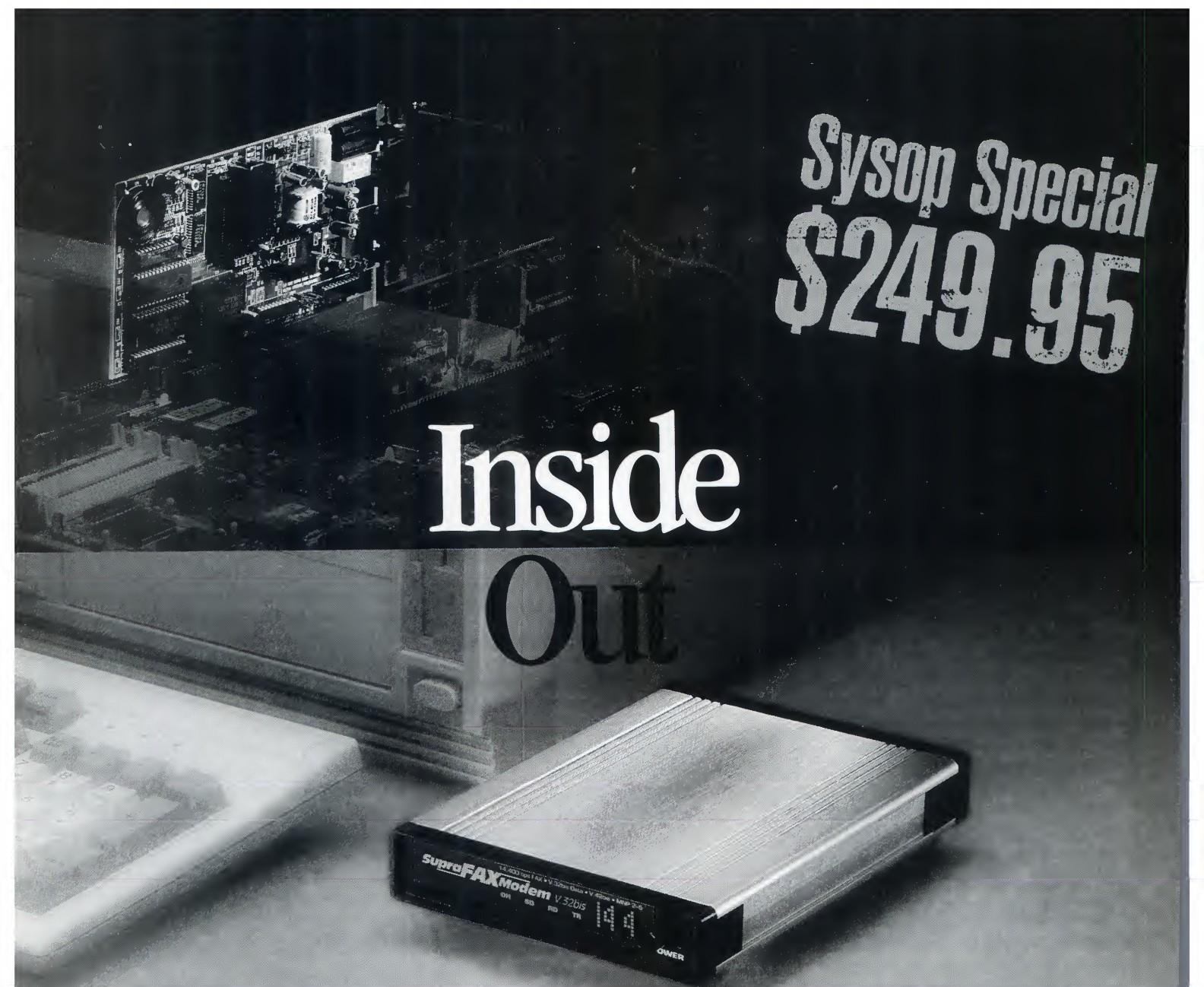
James N. Hughes
1100 Fair Park Blvd. #2
Little Rock, AR 72204
Registration Fee: \$10.00

Paint Shop Pro

JASC, Inc.
17743 Evener Way
Eden Prairie, MN 55346
Registration Fee: \$49.00

Time & Chaos

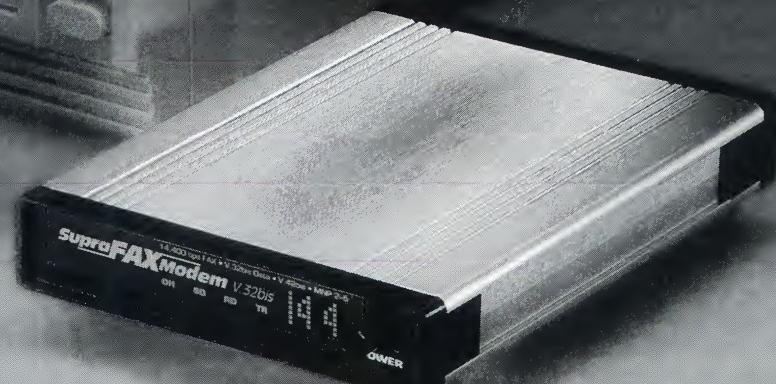
iSBISTER International
1314 Cardigan Street
Garland, TX 75040
Registration Fee: \$19.95



Sysop Special
\$249.95

Inside

Out



The Sysop Choice: SupraFAXModem

Inside or Out, now you can choose the hot-selling SupraFAXModem™, technology that best fits your BBS. Either way, Supra can turn your BBS into a communications powerhouse!

Supra's faxmodems offer top-of-the line functionality like 14,400 bps fax and data, compression (V.42bis & MNP 2-5), support for Class 1 & 2 fax commands, and compatibility with Group 3 fax machines.

But SupraFAXModems don't stop there. We've enhanced the standard Rockwell modem technology. The revolutionary status display on Supra's external modems makes it easy for you to monitor online activity. The SupraSmart™ UART on the internal V.32bis faxmodem significantly enhances the potential for error-free transmissions.

Featuring
Rockwell
Modem Technology

Fall Back/Fall Forward technology lets the modem adjust to changing line conditions. And Adaptive Answer® recognizes whether an incoming call is fax or data.

The available Caller ID* option can allow positive identification of all callers without the normal tedious logon sequence. Prevent unauthorized entry due to lost or stolen accounts and passwords because the BBS can know exactly who's calling.

And Supra offers qualified Sysops an "insider" price on both internal and external faxmodems. Choose the faxmodem that's right for you and call Supra's BBS (503-967-2444) or 1-800-727-8772 today for more information.



MODEL	RETAIL PRICE	SYSOP PRICE
SupraFAXModem V.32bis external with Caller ID	\$449.30	\$249.95
SupraFAXModem V.32bis internal with Caller ID	\$399.90	\$189.95
SupraFAXModem V.32 external	\$299.95	\$199.95

* Adaptive Answer and Caller ID require software support. Caller ID also requires service from the local telephone company.
7101 Supra Drive S.W., Albany, OR 97321 USA • 503-967-2410 • Fax: 503-967-2401 • All trademarks belong to their respective companies.

CALLER ID
AVAILABLE NOW



You can even do virus scans on the zipped files.

One of the nicest features is the ability to do a "checkout" of a zipped file. This allows you to decompress and run a program before actually install it on your system. After running a virus check on the zipped file, WinZip decompresses it into a designated directory and allows you to run it. After exiting the program, all the files, except the original ZIP archive, are deleted. Win Zip works with ARC and LZH compression programs as well.

WINDOWS UNARCHIVE (WUNA.EXE)

WUNA or Windows UnArchive is another excellent utility. This one is strictly concerned with decompressing archived files. Unlike WinZip, it comes packaged with both PKZIP and ARJ.

Like WinZip, It also allows you to "checkout" a zipped file. The interface is clean and the program easy to use even for the novice. To unzip a file, just enter the name in the program or just drag the file name onto the WUNA icon — what could be easier!

PAINT SHOP PRO

This program will not allow you to create graphic files, but it is one of the slickest available for viewing and converting between formats.

Paint Shop Pro from JASC, Inc. supports the most popular graphic formats including TIF, PCX, PIC, WPG, TGA and BMP. This means you can convert any of these image formats into any of the others.

Among the image-manipulation tools are the ability to rotate, flip or resize an image. You can create a mirror image, apply filters, create a negative and even change the resolution of the original.

All this is fairly standard stuff, but there is more to this fine program. One of the best features is the ability to alter the information of an image that was created on a PC so it can be used on a Macintosh. Another great feature is the ability to do screen captures within

windows. If you have ever struggled with writing a user's manual for a program, you know how valuable this feature can be.

TIME & CHAOS

Providing your schedule is not as complicated as that of the newly elected President, this Personal Information Manager should keep you on schedule all the time.

Time & Chaos includes an appointment manager, phone directory, monthly calendar, daily schedule, and to-do-list. The main screen displays all the essential information and the easy-to-use interface and three-dimensional buttons make using the program easy.

The phone book has plenty of room for names, address, fax numbers and even extensive notes. It will even dial numbers for you through your modem. Best of all, the search facilities are excellent.

RUNNING YOUR BBS LIKE A NEWS SERVICE

By Jim Thompson

There was a time when running a Computer Bulletin Board was nothing more than a hobby. Of course, those were the days of tie-dye shirts and day-glo painted vans. Today, most of us see our BBS as a business—a business that, hopefully, makes a profit.

Unfortunately, most Sysops are still thinking like hobbyists. Actually, what you have is a business—a business that provides news, information, products and services.

I have been a journalist for more than 20 years. To me, running a BBS is very much like running a news service. There are deadlines that must be kept and news that must be updated. Even a monthly magazine has its daily deadlines. A working BBS is more like a newspaper or wire service. The deadlines come not just daily, but hourly.

KEEP IT TIMELY

Like a news service, if you want your BBS to be successful you must tend to it every day. You must see it as a living, dynamic system that is constantly evolving. The one thing that will kill a BBS faster than anything else is to neglect it.

Any journalist will tell you that there is nothing more useless than yesterday's news. This applies to a BBS. If callers see the same things every time they call, they will soon stop calling. I run a BBS which is open only to journalists. From experience, I can tell you that if they call in three times without seeing something new, they stop calling—and we don't even charge for our service.

If a user has not called in over a month, I make a point to call him or her and ask why. The reaction is usually the same. "I called and called but didn't see anything new. I don't want to waste my time or money," is what I usually hear.

The point is that even a "free" Bulletin Board costs the user. There is the cost of the call and the cost of the time involved. Let's face it, the novelty of BBSing wore off long ago. Today, it is a communication medium. Those who run successful boards understand this.

The first step to running your BBS like a news service is to keep it updated on a daily basis. Make sure there is always something new for your callers. This might be a new shareware program, a tip on getting the most out of using your system or information on a seminar or meeting.

KEEP YOUR USERS UP-TO-DATE

Never assume that everyone who calls knows as much about your system as you do. Not everyone is an expert in online communications.

Recently, I received a message from one of our users asking if there was a way of sending a message to more than one person without having to re-type it. Our board runs under Phil Becker's TBBS which has an excellent facility for sending carbon copies of a message. I use it all the time, but it never occurred to me that others do not know of this "secret" feature.

It only took me a few minutes to explain how to send copies. The reaction was remarkable. Suddenly, a whole new area opened for this caller. You would have thought that I had given him an expensive present. He sent multiple messages to everyone on the system he knows and even called people not on the system to tell them about the wonderful "features" we have that no other board offers. The result was a satisfied customer and an increase in users.

Perhaps you could offer a system "feature" of the month in which you spotlight a particular function of your BBS. These could later be compiled into a user's manual that you send to new subscribers or use as an incentive to those who renew their subscription.

BE RESPONSIVE

Keep in touch with your users. There is not a newspaper or magazine in the world that could stay in business very long if they were not responsive to their readers. The larger news organizations spend millions doing surveys. They stay in business because they ask their readers what they want and then give it to them.

A BBS offers a unique opportunity to include your customers in the decision making process. The interactive ability of an on-line system allows your callers to help shape the system. Users who have an active hand in shaping the system, are loyal and frequent users. It's no secret, the more often your users call, the more successful your BBS becomes.

Another benefit is advertising. Users who feel a part of deciding what is on a BBS will carry the torch to others. They will tell their friends to call. There is nothing better than this kind of personal, "word-of-mouth" advertising.

THE NOSE KNOWS

As a BBS operator you have to be part journalist, part public relations person and part advertising executive. An old joke tells us that news is the process of sticking your nose into someone else's business. Public relations and advertising is sticking your business into someone else's nose.

Just as a journalist communicates with words, so does the BBS operator. High quality, 24-bit graphics images via modem are possible, but the industry is just beginning to blossom. Even when it does come to full flower, words will continue to be the most important method of communicating your ideas and messages.

The bulletin board format presents a unique opportunity to communicate on a very personal level. You have a captive audience, but it is one you can easily lose if you insult or boor them. One of the biggest problems I see with bulletin board systems are screen-after-screen of rambling, boring discourses on meaningless topics.

Most people who call into a BBS want to get right to the heart of the system. If it is shareware you feature, you have to assume your callers are interested in getting that shareware. What they don't want is to wade through a long introduction about something they probably don't care about. It may all seem interesting to you, but remember, it is your customers you need to please—without them you have no business.

BASIC RULES OF JOURNALISM

If you do need to post messages, you should try to adhere to the basic rules of journalism.

* **Keep Your Message Brief.** Researchers tell us that the average person's attention span is only about 30 seconds. In print, that means only 75 words!

This may not sound like much, but think about it. We live in a world of 30-second messages. The world of television and radio revolves around the 30-second commercial. Just think of the lasting impression these short clips have on our lives. Who can forget "I can't believe I ate the whole thing," "Where's the beef!" or "You deserve a break today."

The bottom line is, if you can't say it in about 75 words, you don't understand what you want to say.

* **Use Headlines.** Headlines not only communicate a lot in a short space, but

can leave a more lasting impression than volumes of material. Again, keep it short. A headline should never take up more than two lines and one is much better. Each line should be no longer than 25 characters including spaces.

* **Style.** Say what you want to say as quickly as you can. Get the five w's (who, what, when, where, why) into your lead sentence.

Use short sentences with active verbs to give your message some impact. Which has more punch: "Deficits will hurt our company" or "Deficits will spread a devastating poison through the economic bloodstream of our company."

Use descriptive words and paint word pictures. A good example is a recent appeal for money to support animal rights. They could have simply said, "Send money so we can take care of the millions of abandoned dogs and cats." Instead their appeal was much more human and emotional.

The message read in part, "Imagine yourself alone and starving. You are on a cement street surrounded by cement buildings. The buildings have no doors and no windows. The street is endless. Hope is gone. This is what an abandoned dog or cat faces when its turned loose in the city."

Don't be afraid to use humor. On a small BBS system, this is often the best approach to getting a message across. Just remember to keep it within the bounds of good taste and not offend anyone.

* **Avoid.** Fancy, stilted wording and exaggeration is never good. This applies to the visual presentation as well as the written. A message that has four different colors, and every other word flashing is annoying not interesting.

You should also keep this advice in mind when designing your menus. I call dozens of BBSs every week. To be honest, there are few that I have any interest in calling a second time. The menus are so confusing on most that I get a headache just trying to decipher what is available.

Just because you have 256 colors available, doesn't mean you have to use them all in every menu. Unless it is absolutely necessary, flashing letters detract rather than enhance the look of your menus.

One system I called recently had a full screen Ansi menu with 15 different colors and 25 possible selections all woven into a cute drawing that looked like the Roman Coliseum complete with columns. To make it worse, when you did make a selection, the next menu painted over the main menu. The next menu did the same. It wasn't long before I had five menus on the same screen, one on top of the other. The result was a confusion of conflicting colors and a thoroughly useless set of menus.

I am sure this took days or, maybe, weeks to program. I am also sure the Sysop and his friends thought it was wonderful. This approach may be fine for the hobbyist who is running a board for his or her own amusement, but it is definitely not a way to keep paying customers. The technology can be seductive, the key is to use it wisely. Once again, the best advise is to KEEP IT SIMPLE.

GETTING OUT THE WORD

The same principles that apply to running your BBS like a news service apply to telling news organizations about your BBS. There is no reason why you cannot get your local newspaper to carry a story about your bulletin board. Perhaps you are running a board that deals with home repairs, consumer information or news on local government. This is exactly the kind of a story a local paper would love to have.

Using the principle we discussed earlier about writing short, concise messages, develop a single page press release describing your service. Be sure to clearly describe what you are offering and highlight the high tech aspect of the medium. This story has all the elements news editors look for in a feature story: a local angle, new technology, community involvement, and, perhaps a service that is genuinely needed.

You might even want to become a media

resource for your local paper. A media resource is an expert upon whom newspapers and broadcast stations depend for specialized information and advise. You could be the expert on computers. The result would be that you would be quoted on any major story involving computer technology.

Along with your name, you would likely also have the name of your BBS mentioned in the story. Typically, the story has your comments in quotes followed by: "said Joe Doe, who runs the Know-it-All Bulletin Board in Des Moines." This kind of exposure would certainly not hurt your subscriptions.

Running your BBS like a news service doesn't mean you have to go to journalism school or even buy a hat and a trench coat. It simply means thinking about what your callers want and then giving it to them in a pleasing, easy to understand manner.

[*Jim Thompson is Managing Editor at Western News Service in Los Angeles, California. He also operates the Philip Morris Racing Information System BBS used by over 400 journalists to access up-to-the-minute automobile race results and track-side reports. He can be reached by e-mail at 321-4127@mcimail.com - Editor/*

MACINTOSH BBS NEWS

by Bill Gram-Reefer

MACWORLD EXPO ROUNDUP

Like a pig in a python, the annual MacWorld Expo extravaganza cycled through the system for the eighth time since 1984. But this time the crowd was noticeably different, what with all of Apple's color printer introductions and assorted multimedia mantras and mavens buzzing about San Francisco's Moscone Center. All of Apple's new creative toys brought out the kid in the rest of us, drawing a much more relaxed crowd than the attendee mix from past years when self-important business themes produced corporate button-down types accompanied by squads of



arbitrageurs marching up and down the halls while nodding their heads quietly to one another as they targeted new buyout victims. But alas, since the 80s and Reaganomics are gone, we'll have to make our own way. This time we'll take a look at some of the software announcements of note to sysops, and, next time, review hardware news from MacWorld.

XBR ANNOUNCES WINDOWS AND ISDN SUPPORT

XBR Communications announced its PC Windows interface and ISDN support for hi-BBS, the company's host software program for the Macintosh. The hi-BBS PC Client application allows a PC Windows user to connect to a hi-BBS Server and perform all of the same functions and provide the same graphical user interface as a hi-BBS Client using a Macintosh.

The new ISDN capability provides hi-speed file transfer over ISDN networks that support AT&T or Northern Telecom switches. By using NuBus compatible ISDN cards such as the newly announced Planet-ISDN card from EuRoNis (covered next time), system administrators can benefit from bandwidth on demand to support worldwide communications.

The new version of hi-BBS, 1.06, also supports several new features. CD-ROMS and remote volumes on a hi-



Chicagoland's Largest System

Since 1988

Aquila has filled the computer screens of Chicagoland for over three years, growing from a single modem line system in 1988 to over 25 lines in 1992. Aquila's success over the years is due to the enthusiastic support of our users. New callers are encouraged to download our current file list and electronic mail conference listing. A short guided tour highlighting our system services is also available for new users. All of our information is automatically mailed to you to read in the comfort of your home or office. So pick up your modem and give us a call! You will find Aquila BBS to be the most valuable bulletin board in your dialer.

Programs - Thousands On-Line

Give your modem a workout! We add new shareware and public domain programs everyday. Over 400 programs are added weekly. With more than 5 Gigabytes of on-line storage, we stock over 50 thousand programs. Aquila makes it easy to find the programs that are important to you, by organizing them into 120+ file directory categories everyday.

We cater to the Windows User

With Windows becoming the most popular user interface around, we make an extra effort to keep you supplied with the latest programs and enhancements by devoting a special conference area just for Windows containing 2000+ files organized into 40+ file directory categories.

Our organization and the latest programs make our file areas the most popular around. These are just a few of our most popular categories available:

- Diagnostic Utilities
- System Enhancements
- File Organizers
- Word Processing

- Computer Games
- Music and Midi Sound Files
- Computer Animations
- CAD Drawing Utilities

- Business - Finance - Tax
- Novell and Lan Utilities
- Database
- Programming

- Icons - Icon Managers
- Wallpaper - BMP's
- Multi-Media Related
- Fonts - Font Utilities

New User Information

All first time callers receive by mail, our printed 'New User Information' and 'E-Mail Conference Directory' guide, as well as a 'Quick Command Guide' to help you get the most out of Aquila. The new user information covers system services such as answers to commonly asked questions, USA Today, Boardwatch Magazine, and Electronic Mail off-line readers. The 'Quick Command Guide' is a desktop lookup for using Aquila commands.

Aquila Starter Kit

Callers that are new to modem communications will find 'The Aquila Starter Kit' a great time-saver. Easy for the beginner and helpful for the expert! This \$39.95 kit includes the following:

- Procomm (communications program)
- Full documentation for all BBS commands
- Off-line file browsing program

- Our complete file listing on floppy disk
- Off-Line E-Mail Reader
- Three month basic membership

Around The World E-MAIL Over 450 Conference Topics

We currently echo to and from ILink, RIME, Fido-Net and Throbnets with more to come in the near future. You can get virtually any question answered here and join in on lively discussions with people from across the country and around the world. We also publish our own 'E-Mail Directory' that is sent to all users of Aquila BBS. This directory lists all of our conferences by category and gives a brief description of the topic of each one. Here is a small sampling of over 450 interesting topics that we offer:

- General Discussion
- Computer Related

- Vendor Support
- Programming Languages

- For-Sale
- Current Events



The AQUILA BBS Team (Left to right: Kevin & Kristy Behrens, Steve Williams, Chris Babb)



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BBS Server are supported through aliasing. Available now, hi-BBS allows for unlimited users with server pricing based on the number of simultaneous sessions a sysop wants to support. A two-channel server runs \$369 (U.S.), while a four-channel server retails at \$569. Each additional upgrade of \$500 doubles capacity. Demo versions of the hi-BBS Client, Server, and User manager are available free and can be downloaded from the company's BBS. XBR Communications, 5253 Decarie Blvd., #350, Montreal, Quebec, Canada H3W-3C3; (514)489-1001 voice; (514)489-4966 fax; (514)489-0445 BBS; AppleLink: XBR.

TELEFINDER SHIPS MULTI-SERVER HOST

Spider Island Software, maker of **TeleFinder**, announced it is shipping Version 3.0 of its **Group Edition Host** software. TeleFinder 3.0 runs on all Macintosh computers, and is 32-bit clean, System 7 "Savvy," and includes full Balloon Help. TeleFinder Group Edition Version 3.0, which includes the BBS host program, user access software with unlimited distribution license, and full documentation, retails at \$425, and is available direct from the company and authorized resellers.

Named the Best Electronic Communications product for 1992 by MacWorld Australia. TeleFinder 3.0 is capable of managing up to 32,000 users and features a multi-server architecture that allows a single system to run multiple nodes of the same BBS on separate Macs on a network. Also new, is its full implementation of **AppleEvents** supporting advanced functionality such as automatic online registration, full remote administrative capabilities including adding and deleting users, changing user paths and privileges, and the ability to control all of the host's program modules through any **AppleScript** or compatible system utility such as UserLand's **Frontier**. Other enhanced features include a menu-driven terminal interface with user-selectable TTY or ANSI graphics options, unlimited paths with customizable multi-colored icons and separate user privileges, and faster re-

porting for billing and statistical analysis. Spider Island Software, 4790 Irvine Blvd., # 105-347, Irvine, CA 92720; (714)669-9260 voice; (714)730-5785 BBS.

DOS SUPPORT FROM DAYNA AND INSIGNIA

Dayna Communications, Inc., originator of Mac-to-DOS and Mac-to-NetWare connectivity technology, announced **DOS Mounter Plus**, its newest and most versatile MS-DOS file access utility available for Macintosh computers. DOS Mounter Plus has all of the features found in the company's original DOS Mounter including MS-DOS file access on the Macintosh desktop, **Extension Mapping**, and DOS disk formatting capabilities, but now includes the capabilities of its **NetMounter**, which provides access to NetWare 2.15, 2.2, and 3.11 file servers, without having to buy Novell's **NetWare for Macintosh**. Other new features include an improved graphical user interface, easier installation, support for magneto-optical drives, and faster DOS media formatting. Additionally, you get **MultiMounter** and **MultiFormatter**, a couple of utilities that allow Mac users to format and partition almost any kind of DOS media. To have shipped in February and retail at \$99.

Insignia Solutions, meanwhile, announced at MacWorld that it is lowering the pricing of its entire **SoftPC 3.0** product family. These products let you run DOS or Windows software on your Macintosh. Here's that chance to run a Galacticomm BBS you've all been waiting for. In "response to the continuing drop in PC hardware prices," the new retail cost for **SoftPC for Windows** is \$499, **SoftPC Professional** is now \$325, and **Universal SoftPC**, will retail at \$165.

Dayna Communications, Inc., 50 South Main Street, Salt Lake City, UT 84144; (801) 531-0600 voice. Insignia Solutions, 526 Clyde Avenue, Mountain View, CA 94043, (415) 694-7600 voice.

NEW DISK MANAGEMENT SOFTWARE

Sysops rely on fast file transfers to keep their systems running smoothly. But you can't control the kind of modem that calls your system. If a caller wants to hog your system with a 1,200 bps modem, there's not much you can do. Aside from using V.32bis modems (the kind that work), what you can control is making available a fast hard drive and a system that can consistently deliver fast throughput. While **Quadra SCSI** throughput is tops, followed by the Mac II ci, there's not much more you can do short of opting for one of the NuBus SCSI II accelerator boards from MicroNet or FWB. One way to maximize hard disk performance short of these relatively expensive upgrades is to employ any number of software-based hard disk utilities that can increase your drive's throughput.

A number of software publishers introduced new disk management software for the Macintosh during MacWorld. Insignia Solution announced **RapidTrak**, a disk formatting and management package that improves the performance of slower drives, such as magneto-optical or floptical drives. In addition, the company claims that RapidTrak can boost the performance of fixed and removable drives to that of high-capacity, high-speed drives.

RapidTrak sets up a sort of a cache memory to improve the responsiveness of hard drives by using RAM memory to retrieve data instead of re-reading it from disk. Since RapidTrak does not modify the way that the SCSI hardware is accessed, it combines efficient SCSI data transfers and "smart caching" of frequently used data in RAM to minimize wait times. The smart cache has been tuned for specific applications such as word processing, desktop publishing, database access or file-serving functions such as BBS systems perform. Compatible with its own **AccessPC** and Apple's **PC Exchange** disk access utilities, RapidTrak is also compatible with drives from nearly every major vendor, allowing users to buy lower-priced drives and upgrade performance. RapidTrak also mounts car-

tridges formatted by other disk managers, providing a solution for service bureaus or other organizations that need access to diverse media formats.

RapidTrak, which is slated to retail for just under \$100, includes four components: RapidTrak, a control panel for adjusting the RAM used to speed access to hard disks and removable media; **RT Formatter**, an intelligent disk-formatting utility; **RapidLock**, a control panel for mounting, locking, and adding passwords to partitions; and **PC DiskJockey**, a control panel that enables Apple's PC Exchange software to work with magneto-optical, floptical, and cartridge drives.

Disk Cafe, from Bering Industries, is a utility set that contains three modules that provide helpful tools to manage your hard drive(s). **Cappuccino** is an easy-to-use control panel device, system extension and SCSI disk drive that allows users to mount new drives without system restart, mount specific volumes, verify writes, display SCSI and Mac information, and vary a "read ahead" cache to optimize performance. The **Disk Cafe** module can format and verify hard disk and removable media, create a variety of partitions, adjust system defaults, and create user logs. The most advanced module, **Kitchen**, performs comprehensive tests for media and drive damage, control certain drive parameters, fast sector copying, perform security erase, modify boot partitions, and send direct SCSI commands.

Central Point Software unveiled **Safe & Sound**, its hard disk utility package that can automatically identify and fix more than 100 of the most common hard disk problems. Aimed at the mass market of Macintosh consumers (and sysops) who are neither experienced or interested in understanding what can go wrong with computers, Safe & Sound will carry a retail price of just \$49.95.

If users have a problem, they can simply insert the Safe & Sound disk which automatically scans all volumes. When a problem is found, a dialog box offers an immediate fix. The explicit interface leaves no doubt as to the application's function, while a Progress Bar reflects

status of analyses and repair. Additional checks are offered through an Options screen. Typical problems that are addressed by Safe & Sound include: start-up problems, missing files and folders, virus infection, and crashed hard and floppy disks.

Finally, Dantz Development announced its **Retrospect 2.0** and **Retrospect Remote 2.0** backup software packages. Highlights include a new interface, improved performance, and support for new drives and tape autoloaders from Archive, Exabyte, GigaTrend, Tandberg, Teac, and ADIC. All functions are now split into five logical areas represented by icons. Scripting, folder selection, and reporting have also been improved. Additionally, many areas relating to performance or capacity have been improved as compression runs twice as fast and uses less RAM, catalogs may now be any size and are automatically compressed, and the previous limit of 4,000 folders has been eliminated.

Pricing remains at \$249 for Retrospect and \$449 for the remote version. Owners of previous versions of Retrospect can upgrade for about \$50 while Remote upgrades are available for \$70.

Insignia Solutions, 526 Clyde Avenue, Mountain View, CA 94043, (415) 694-7600 voice. Bering Industries, 246 East Hacienda Avenue, Campbell, CA 95008; (800) 237-4641 voice; (408) 364-2233 BBS. Central Point Software, 15220 NW Greenbrier Parkway, #200, Beaverton, OR 97006; (503) 690-8090 customer support. Dantz Development, 1400 Shattuck Avenue, Berkeley, CA 94709; (510) 849-0923 voice; AppleLink: DANTZ.

THREE BOOKS

Next time you're waiting for the laser printer to finish up 353 labels why not thumb through **The Smiley Dictionary: Cool Things To Do With Your Keyboard**, a compilation of Emoticons collected by one Seth Godin who had literally nothing better to do than to catalog about 179 silly "Smiley" symbols you can use within your online correspondence to one-up your readers.

Here's Seth's keyboard salute to:

Hank Aaron	:)-!<
Geordie LaForge	-)
Howard Stern	@#\$\$!
Robocop	((

Well, you get the picture. This book's got everything you'd want: a dedication, acknowledgements, a foreword by Robin Williams (not the funny one), a preface, a historical note (read bald-faced lie about the origin of Smileys), coupons offering time off for good behavior on CompuServe and America Online, and two different indexes. The Smileys come in a variety of categories including: Classic, Characters, Celebrity, Nasty, Challenging, and more. \$6.95. Peachpit Press; (800)283-9444.

And for the novice comes a more suitable work penned by Carla Rose for the Windcrest series from McGraw Hill, **Mac Online!: Making the Connection**. Non-technical, including many charts, diagrams, and screen shots, Mac Online is a good-sized handbook designed to make telecommunications simpler, productive, and perhaps, just perhaps, enjoyable.

Rose covers various modems and their installation, and explains how to use shareware programs including **FreeTerm**, **Z-Term**, and **Termulator** to access online services like **Prodigy**, **CompuServe**, and the other usual suspects. Included are useful primers on how to send electronic mail and faxes, use various protocols, and engage in some of the available, real-time online conferences. 448 pages, \$24.95.

From Ventana Press comes **The Mac Shareware 500: the last word on the best virus-free Mac shareware**. This edition includes four diskettes full of shareware described in the book. Did I miss something? If you have the disks then you don't need to download the programs from America Online which threw in 5 free hours of online time with the purchase of the book. I guess the publisher figures to whip us into a shareware downloading frenzy.

It could happen, too, as authors Ruffin Prevost and Rob Terrell categorize and

Let There Be Light.

Still searching for the ultimate in BBS software? Then step into the light and see more of what you're looking for: Searchlight.

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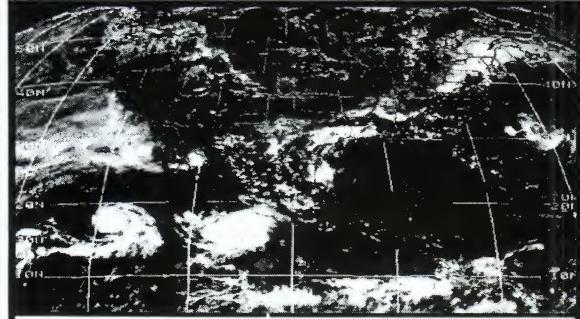
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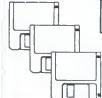
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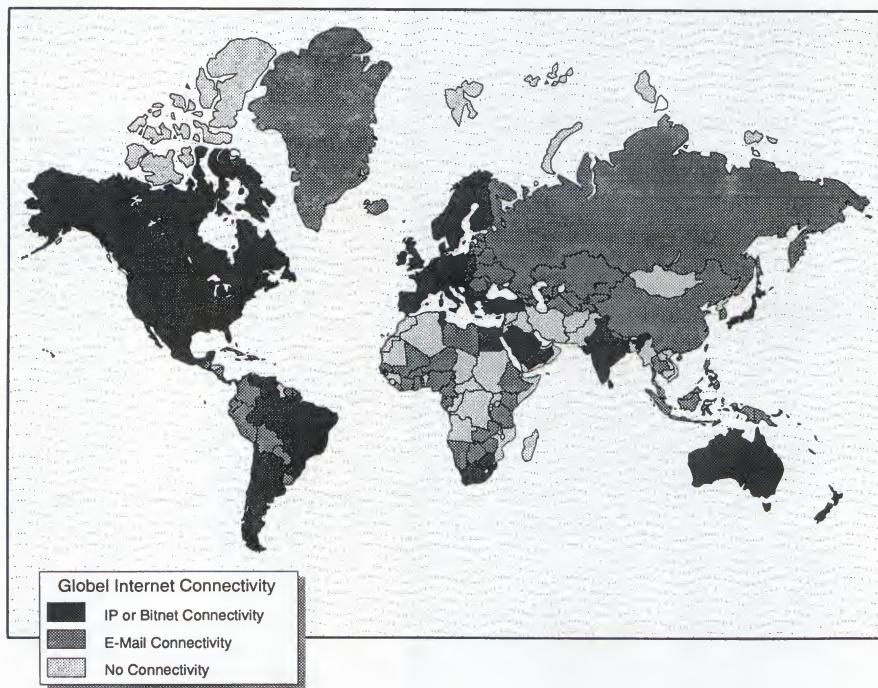


review free or shareware utilities, fonts, games, desk accessories, control panels, graphics, **HyperCard**, sounds, telecom, business, and educational programs that lurk within the net. They include other critical information concerning the current version number of the program, name and address of the author, and, where applicable, a rating system. The book offers more by listing some user groups, and in explaining why you need more than two megs of RAM, or how to conserve memory and other avuncular advice, including many tips and comments scattered throughout. Are these the songs the whole world sings? Maybe, at least in the key of Macintosh; particularly since many of these files are on your hard disk and get downloaded everyday by your users. Overall, I kind of like the idea of having a source that describes one could consider a core collection of programs, which, from **Dungeons of Doom** to **SCSIProbe** represent the collective unconsciousness of what a Mac hack is. Almost 400 pages; a pricey \$39.95.

ATTENTION MAC SYSOPS

If you have a Macintosh-based BBS (even if it isn't GUI), let us know who you are and what you think you're doing that makes your board special. To make things easy for everyone, mail a diskette containing your user program with a preset account, time allotment (1-hr for editorial deadbeats like me should be plenty) and password to the address below so I can log on and take a look around your system. Also include a text-file that describes your board and any interesting places on it you think are special. I'll try to visit as many boards as possible and write about the most interesting ones I can find. MAC BBS, 2069 Highland Drive, Concord, CA 94520.

*[Bill Gram-Reefer, based in Concord, California, is president of **WORLDVIEW**, a public relations firm specializing in connectivity and communications. He operates **WORLDVIEW BBS** (510)676-2919, running on a Macintosh computer. Bill has been writing about Macintosh computers since 1984, and can be reached at: wk05156@worldlink.com]*



INTERNET NEWS

PRIVACY ENHANCED MAIL - A STANDARD FOR ENCRYPTING INTERNET E-MAIL

Part of the magic of the global e-mail network built around the Internet is a sort of least common denominator set of standards that allow various levels of connectivity between machines that have little else in common. DOS, UNIX, Macintosh, VMS, SunOS and other operating systems don't actually even use precisely the same version of the American Standard Code for Information Interchange (ASCII) character set, yet they can all send and receive a rude form of electronic mail under Simple Mail Transfer Protocol or SMTP. Additionally, they can share files, perform remote logins, and actually run applications on each other to varying degrees.

The basis for all of this is a system of standards termed Requests For Comment or RFC's. These are simply documents produced usually by small committees of individuals collaborating electronically to iron out some of the techni-

cal vagaries of linking one computer to another in the night. Broadly, they function under the umbrella of the Internet Engineering Task Force or IETF. Currently, most of this type of work falls under the auspices of a fairly recently developed group called the Internet Society started by Vinton Cerf. Sub-committees under the IETF work on draft documents which are then submitted for publication as RFCs. There are currently over 1400 RFCs available covering all aspects of Internet connectivity.

The basic format of an electronic mail message on the Internet is defined in an RFC written by David Crocker and released August 13, 1982. **RFC0822** defines the format and nature of the ASCII text fields appearing in the header of an Internet message. All of those **DATE**, **SUBJECT**, **REPLY-TO**, **FROM**, **TO**, **FORWARDED-FROM** and other fields are described in this document. And actually, the text body of an **RFC0822** compliant message can be anything at all. Most of the mail-agent software operating on all the diverse systems passing Internet mail treat the information in this loosely defined message header approximately the same way.

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In recent years, there has been some movement toward making further definitions regarding the types of data appearing in the message body of an RFC0822 message. In 1982, ASCII text was about all that mattered. In 1992, developers were eager to include binary files, sound recordings, page layout output with fonts, and even video in electronic mail.

And so in 1992, largely due to the work of N. Borenstein of Bellcore and N. Freed of Innosoft, a draft proposal was put together for **Multipurpose Internet Mail Extensions (MIME)** noting Mechanisms for Specifying and Describing the Format of Internet Message Bodies. This was published in June of 1992 as **RFC1341**. RFC1342-1344 further detailed matters such as gateway implications of the new standard, use of non-ASCII characters in headers, and user agents. These standards don't actually replace RFC0822, but more accurately augment it by defining elements appearing in the message body.

The MIME standard has gained some legs with dozens of e-mail program vendors announcing at least partial compliance with MIME. The most notable advantage of MIME is that it establishes a standard means of enclosing binary file attachments, although there is also some immediate interest in including Postscript documents. Ultimately, it will offer a path to include voicemail, video, graphic images, and more in electronic mail.

Because of the wantonly open architecture of the Internet, many mail users are concerned about the privacy of their communications. Mail generally flows across any number of intermediate systems on the way to delivery in ordinary ASCII text files that virtually any system administrator along the way can look into with a standard editor and read with no one being the wiser. There's no particular reason for them to do so, but the only privacy really afforded is the fact that your message is poorly identified and traveling in a river of thousands of others. For some, this is uncomfortably insecure. A number of underground groups have begun experiments with data encryption of e-

mail using a freely distributed program titled **Pretty Good Privacy**.

Over the past year, the Privacy and Security Research Group (PSRG) of the IRTF and the PEM Working Group of the Internet Engineering Task Force has been developing a standard to address the security of electronic mail. And in February, 1993, the IETF published a set of four RFCs describing a standard titled **Privacy Enhancement for Internet Electronic Mail** (informally known as Privacy Enhanced Mail or PEM) to establish a standard for encrypting electronic mail using public key encryption techniques. The standard actually also covers key authentication, certificates, and digital signatures that may be key to performing such security sensitive transactions as transferring funds electronically, contracts, agreements, and other communications that require validation of who sent what to whom.

RFC1421 is titled **Privacy Enhancement for Internet Electronic Mail - Part I: Message Encryption and Authentication Procedures**. Written by J. Linn, this document describes the overall process of public key and private key encryption of messages.

RFC1422 is titled **Privacy Enhancement for Internet Electronic Mail - Part II: Certificate-Based Key Management**. Written by S. Kent, this document defines a supporting key management architecture and infrastructure, based on public-key certificate techniques, to provide keying information to message originators and recipients.

RFC1423 is titled **Privacy Enhancement for Internet Electronic Mail - Part III: Algorithms, Modes, and Identifiers**. Written by D. Balenson, this document describes the encryption technology used and references documents you can use to develop applications. PEM allows for both the Data Encryption Standard (DES) favored by the National Institute of Science and Technology and the RSA algorithms patented by MIT and licensed by Public Key Partners. This use of a patented encryption algorithm and the requirement for licensing through PKP is the most controversial element of PEM.

RFC1424 is titled **Privacy Enhancement for Internet Electronic Mail - Part IV: Key Certification and Related Services**. Written by B. Kaliski, this document describes three types of service in support of Internet Privacy-Enhanced Mail: key certification, certificate-revocation list (CRL) storage, and CRL retrieval. Such services are among those required of an RFC 1422 certification authority.

The Internet Society will actually administer the certification-authority for the public key system. Basically, they will designate other entities who act as a registry and certification authority for public keys.

Apple Computer, Inc. has been working on public key cryptography since 1991 and they immediately announced that PEM's digital signature feature will be incorporated into the Macintosh operating system later this year.

PEM actually works with **RFC0822** messages. There is a draft document dealing with using PEM with MIME titled **draft-ietf-pem-mime-00.txt** available at **cnri.reston.va.us**. Written by Marshall Rose, Ned Freed, and Stephen D. Crocker, (crocker@tis.com), it goes into some detail on using PEM cryptography within MIME messages.

For those interested in developing MIME or PEM features in their electronic mail software, the RFCs are freely available. Anyone with ftp access can ftp **nic.ddn.mil** and will find all the RFCs in the subdirectory **/rfc**. But you can also have RFCs e-mailed to you from several mail servers that deliver the documents by electronic mail. Send an electronic mail message to **RFC-INFO@ISI.EDU**. In the body of the message enter the following lines to retrieve RFC0822 for example:

**Retrieve: RFC
Doc-ID: RFC0822**

The full text of the document will be e-mailed to your mail box. Similarly, you can send an e-mail message to **MAIL-SERVER@NISC.SRI.COM**.

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send rfc0822

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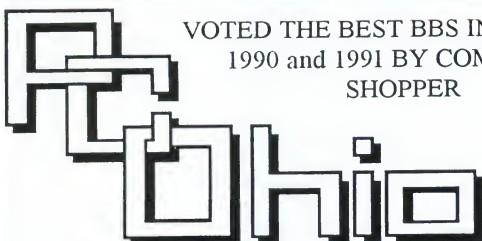
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We have packaged all these RFCs to make available on the Boardwatch BBS in the Internet file area under **PEM-RFC.ZIP** and **MIME-RFC.ZIP**.

USENET ORACLE - WHIMSICAL KNOW-IT-ALL OF THE INTERNET

by Kevin Savetz

Have you talked to the Usenet Oracle? He can answer all of your important questions: "What's the meaning of life? Where does the dryer put the socks it steals from the wash? How much wood could a woodchuck chuck if a woodchuck could chuck wood?" Or, he could <ZOT> you into a smoldering pile of ashes. Either way, he's a great guy.

The Usenet Oracle isn't really a person. It's an electronic mail service run by Steve Kinzler, a graduate student and systems administrator at Indiana University. Send the Oracle your question, and within a few hours, you'll receive an answer from the all-knowing one.

The Oracle is a cooperative effort for creative humor. When you send a question to the Oracle server, your message is actually forwarded to someone else who uses the program. He or she mails a (hopefully witty) answer back to the Oracle server, which forwards it to you. Thanks to the server program, all of this is done anonymously - the questioner (or "supplicant") and the answerer (that is, the Oracle incarnate) never know who each other are.

The Oracle started as a program running on an Indiana University computer system. The program became popular, so Kinzler, with the help of hacker Ray Moody, created a network version of the service. The best questions and answers - as selected by volunteer "priests" - are distributed in "Oracularity digests" on the Usenet group "rec.humor.oracle." Oracularities on that group are read by an estimated 26,000 people. Over 700 additional readers (who presumably can not access the Usenet) subscribe to the Oracle mailing list, receiving the Oracularities via e-mail. To date, over 10,000 people have participated by sending in a question or an answer.

Over time, the Oracle has developed his own personality. Writers incarnated as the Oracle often blend in known aspects of his persona: an inflated ego, a sense of humor, his girlfriend Lisa, and the propensity to <ZOT> his less fortunate supplicants.

Why did Kinzler start the Oracle? "Well, it was fun most of the time. Challenging frequently from a programming and system design perspective. But mostly it was that typical hacker's motivation: when a great idea comes along, it just deserves to be done. I thought an e-mail Oracle was a great idea, had the resources and desire to do it, and so I did it. Part of my interest in the Oracle was experimental - I wanted to see what would come of it, what people would do with an interactive, anonymous system like this."

Kinzler (kinzler@cs.indiana.edu) calls the anonymous mail aspect of the Oracle server a crucial aspect of its popularity. "Anonymity gives more people the security to try to be witty or funny in their creative writing. I hope to include people who discover through the Oracle they can and can enjoy writing creatively. And the Oracle gives them a guaranteed audience of two, and, if they're lucky, maybe tens of thousands."

For more information about the Usenet Oracle, send electronic mail to "oracle@cs.indiana.edu" with a subject line of "help." To ask a question, the subject line should include the words "tell me" and the body of the message should contain your question. (If you don't grovel to the sometimes-egotistic Oracle, you may find that you've been <ZOT>ted to oblivion, so you may want to pander to his ego!) You should receive an answer in a day or two, probably much sooner.

Once you ask a question, the Oracle may ask you to answer somebody else's question, as a sort of payment for services. You should respond with the most witty answer possible, so that the supplicant feels gratified in his or her quest for knowledge. If you can't think of a worthy reply, do nothing and the question will be sent to someone else. If you wish to answer a question without ask-

ing one, just send a message to the Oracle server with a subject line of "ask me."

If you don't have access to "rec.humor.oracle" and would like to receive the Oracularities, send mail to "oracle-request@cs.indiana.edu." To get on the distribution list, include a subject line of "subscribe"; to remove yourself from the list of recipients, put "unsubscribe" in the subject line.

[Kevin M. Savetz is a recent graduate from Humboldt University living in Arcata California. He needs a job. He can be reached at savetz@rahul.net]

BBS LEGISLATIVE WATCH

AREAS TO WATCH IN THE NEXT CONGRESS

by Shari Steele

Last month, I highlighted legislation that had been considered by the 102nd Congress. This month, I would like to tell you about some legislation that is likely to be introduced in the upcoming Congress.

TELECOMMUNICATIONS INFRASTRUCTURE TO BE DEBATED

When Congress ended its session last year, several bills were being considered by various committees regarding the orderly development of a telecommunications infrastructure, or a national network for communicating with data and video as well as voice. We expect the 103rd Congress to pick up the infrastructure debate right where the 102nd Congress left off. EFF is excited about this, because one of the bills, that to be introduced by Representative Edward Markey (D-MA), chair of the House Subcommittee on Telecommunications and Finance, incorporates EFF's Open Platform proposal.

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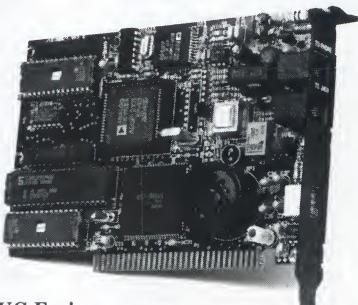
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communications lies in a national network (or network of networks — infrastructure) over which data, video and voice transmissions will be sent. The bigger the network, and the more carefully planned, the greater the diversity of speech and people who can access the network. Ensuring that the network is built in an orderly, systematic way that focuses on affordability, wide accessibility and timeliness is one of the greatest contributions EFF can make to promote First Amendment values. We believe that a digital network with those characteristics would be an “open platform” for information services that could enable individuals to fully participate in the information age, just as the PC was the “open platform” that broadened access to computing power and stimulated the development of software applications.

While we acknowledge that broadband capacity will be needed in the future, EFF maintains that it is vitally important to make a digital information infrastructure available nationwide as soon as possible. And technology is available to make the current narrowband telephone network perform many of the same functions as a broadband network. This technology is called ISDN, or Integrated Services Digital Network. As Representative Markey has explained, “While we are waiting and working toward a high capacity broadband network, it makes sense to take the transitional step toward that goal by endorsing ISDN, or digital service, as a way to begin to develop the information marketplace.”

A recent economic analysis of ISDN found that this service could be made available for less than \$10 per month to individual subscribers. With an ISDN platform in place, information entrepreneurs would be able to reach an expanded market, where they could offer text, video and interactive multimedia services. Public agencies, private communications firms, computer manufacturers, publishing companies and individuals would then be able to access an inexpensive, widely available medium where they could publish and communicate electronically. We expect Representative Markey to reintroduce his bill early in the 103rd Congress.

FBI'S WIRETAP PROPOSAL WILL RETURN

During the last Congress, the Federal Bureau of Investigation (FBI) proposed legislation that would require all providers of electronic communications services to design their systems to facilitate authorized wiretapping. This proposal affects more than telephone companies. Computer software and hardware companies, network providers and BBS SysOps would be affected, as well.

In short, the FBI proposes to require all service providers that enable their users to send or receive wire, oral or electronic communications to “provide such assistance as necessary to ensure the ability of government agencies to implement lawful orders or authorizations to intercept communications.” The FBI proposes that Congress establish a procedure where communications technologies would be required to be certified by the Attorney General that they were open to government surveillance. The proposal does not suggest how providers are to ensure this agency access or how they are to pay for it.

Privacy advocates are concerned that any attempt to ensure easy access by the FBI leaves open a “back door” that could be exploited by others to breach legitimate privacy and security needs in order to alter or destroy information for personal gain or extortion, or merely to create havoc. Considering the extent to which records, transactions, balances, histories and other pieces of vital information are stored electronically, this risk is a grave one. Communications and computer companies are concerned that this added burden will increase their costs and make their software more vulnerable to security breaches by interested parties without a legal right to perform wiretaps. They are also afraid that their products will not be able to compete abroad with foreign-made software that is more secure.

Fortunately, the FBI's proposal, entitled “Digital Telephony,” while supported by the Bush administration and widely distributed throughout the last Congress, was never formally intro-

duced for consideration by a member of Congress. The FBI, however, remains undaunted. The Bureau has worked through the Congressional break to refine its proposal to persuade the new Clinton Administration to support it and push it in the next Congress. A broad coalition of organizations, brought together by EFF, is ready to oppose the next generation of the FBI's Digital Telephony proposal.

ACCESSING ELECTRONIC DATA UNDER FOIA TO BE CONSIDERED

In the last Congress, Senator Patrick Leahy (D-VT) introduced a bill to amend the Freedom of Information Act (FOIA) to establish guidelines to insure public access to the electronic version of stored government data, as well as to printed public information. The Senate Subcommittee on Technology and the Law held hearings on the bill, but it was never considered by the full Congress. We expect Senator Leahy to reintroduce his bill in the upcoming Congress.

First enacted in 1966 and amended in 1974 after the Watergate scandal, the Freedom of Information Act (FOIA) has played a vital role in requiring the federal government to be more open. The framers of the Act (and the framers of the Constitution) believed that democracy without knowledge is meaningless — a citizenry cannot exercise its power to govern itself if it does not understand its choices and the ramifications of those choices. The public has a right to know the actions of its government.

Over the past 25 years, the public has benefited from FOIA in countless ways, including exposures of: waste, fraud and abuse in the government; consumer health and safety risks; corporate destruction of the environment; denials of individuals' civil and constitutional rights; arms sales to foreign governments; and abuses of power by federal agencies, such as the Central Intelligence Agency and the Federal Bureau of Investigation. From revelations about the dangers of the Ford Pinto gas tank and Red Dye Number 2 to accidents at the Rocky Flats Nuclear Weapon Plant, FOIA has enabled the public to be informed. A congressional committee has estimated that as many as 500,000 re-

quests are filed each year under the Act. These requests have enabled journalists, scholars, public interest groups, corporations, private citizens and others to build a solid public accounting of government's activities in a variety of areas.

However, as powerful a tool as FOIA has been, the Act was passed before computers were widely used to store government information. There are no explicit guidelines that agencies must follow when asked to turn over computerized information requested under the Act, nor are there guidelines on the form in which agencies must release the data. As a result of this lack of standard guidelines, government agencies have responded to requests for electronically stored information with a great deal of latitude, with some agencies rejecting them outright while others provide them in full, and others use the law's ambiguity to evade or sandbag requests. Some agencies have held that if any computer programming is required to extract requested data, the result constitutes a new record and is therefore not required to be provided

under FOIA. Government officials have even gone so far as to undermine the intent of FOIA by releasing huge volumes of paper records to effectively hide information that could be found instantly if the records had been released in the form of computer files.

Senator Leahy's bill attempts to correct this misuse of the Act. Among other things, the bill would amend FOIA to: enable people making FOIA requests to receive records in the format in which they are maintained, require reasonable efforts by an agency to provide records in an electronic format even when those records are not usually maintained in that format, and change the definition of "record" to include electronic information and "search" to include an automated examination to locate records.

GOVERNMENT MAY HAVE TO DISSEMINATE INFORMATION ELECTRONICALLY

As discussed above, the Freedom of Information Act requires that information be available to the public on request but does not require agencies to

disseminate it widely. The law governing the dissemination of public information, the Paperwork Reduction Act of 1980 (PRA), does specifically mention computers, but limits the requirement of agency use of electronic technology to making government more effective and efficient. While this is a laudable goal, PRA does not make a requirement that requested information be actively disseminated in computer-readable form. This has resulted in government agencies relying on private sector information distributors, such as Westlaw and Legis-Slate, to make computerized public information available. These distributors "add value" to the information by formatting and organizing it, but often the information — publicly gathered and owned information — is only offered at prices beyond the reach of most citizens.

While a diversity of public and private sources of government information is a valuable hedge against government monopolization and control over access to information, total reliance on the private sector to make public information available electronically is not a

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good idea. In addition to the threat of information only being available to those wealthy enough to pay for it, in many cases, valuable health, safety and environmental information cannot be produced at a profit. If there is no profit to be made, private information vendors are not interested in offering the information at all.

Congress came close to enacting an amendment to the Paperwork Reduction Act that would have required government agencies to disseminate public information electronically while not discouraging private sector distribution and enhancement. The legislation, entitled "The Federal Information Resources Management Act of 1991," was referred to the Senate Governmental Affairs Committee last session and never re-emerged for full Congressional consideration. We expect this important measure to be reintroduced in the upcoming Congress.

Congress also came close to enacting a law that would have made citizen access to and knowledge of government information much greater. The GPO

WINDO Act was designed to set the Government Printing Office (GPO) up as a single point of online access to a wide range of federal databases. (WINDO stands for Wide Information Network Data Online.) The Act, which had a whopping 37 cosponsors in the House of Representatives, would have established online access to public government information through GPO. The GPO WINDO would be a single account, "one-stop shopping" way to access and query federal databases, complementing other agency dissemination efforts. Information would be priced for most subscribers at approximately the incremental cost of dissemination and provided without charge through the depository library system. Despite broad support, the bill was not passed by the last Congress. We expect it to be reintroduced in the upcoming year.

TECHNICAL PROBLEMS WITH ECPA FORESHADOWED

Two years ago, a task force was called together by Senator Patrick Leahy, chair of the Senate Judiciary Subcommittee

on Law and Technology, to report on the privacy implications of the increasing use of radio spectrum to transmit voice and data communications, such as with the new personal communications services (PCS) and wireless local area network (LAN) technologies. The task force recommended amendments to the Electronic Communications Privacy Act (ECPA) to give further legal protection to radio-based communications. The task force also called on Congress to explore technical means, such as encryption, for protecting private, radio-transmitted communications from interception. Congress has yet to act on the task force's recommendations. We are hopeful that it will do so over the coming year.

[*Shari Steele is a Staff Attorney with the Washington office of the Electronic Frontier Foundation (EFF), a nonprofit organization dedicated to advancing freedom and openness in computer-based communications. Send your legal questions to Shari at ssteele@eff.org (Internet) or c/o Boardwatch magazine - Editor]*

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LEGALLY ONLINE

SYSOP JAILED IN GEORGIA

by Lance Rose

Adult BBS' continue to spread across the country. Many of them openly carry industrial-strength hardcore materials, without much apparent concern for legal reprisals. One might wonder if the sysops of these BBS' are fools to proceed so fearlessly, or perhaps the vanguard of a new era of online sexual liberation. More likely, they simply assume the coast is clear. There is virtually no hard news about adult BBS' or their operators getting into trouble. Murky rumors abound (including some retold in this column several months ago), but they're easy to shrug off in their vagueness.

The suspense is over. A man named Robert Houston is currently doing time in a jail in Jackson, Georgia, based on the presence of sexually oriented materials on the BBS he owned and operated. Ironically, he seems to be one of the guys who took all the right precautions. In the end, his prudent measures lost out to a repressive local cultural climate and petty personal vengeance.

For over two years, Mr. Houston's quiet incarceration did not raise even a murmur. Then suddenly, he showed up briefly in a segment of the CNN news show Technology Week as an example of a sysop who got popped. An interview with Mr. Houston was hastily arranged afterward, just in time for this issue of Boardwatch. In a collect call from the Georgia Diagnostic Center, Robert Houston described how he went from sysop of an adult BBS to convicted felon:

Houston owned and operated a video store and repair shop in Georgia. His BBS, a Wildcat system called the Stonewall BBS, was a hobby, and did not net him any money. There was a sister BBS called "Stonewall West" in California, but the two operations shared little but their names.

The Stonewall BBS contained sexually-

oriented adult materials, both straight and gay varieties. Different types of adult materials were separated from each other by security levels defined on the BBS. The materials were relatively mild by adult BBS standards. According to Houston, nothing on the BBS was racier than what one might find in Hustler, a popular magazine nationally distributed on newsstands. There were no files with extreme material such as child pornography or bestiality. There was also a popular chat area, which Houston describes as the BBS version of a 900 sex talk line, using computers to converse instead of our voices.

These areas and materials were closed to casual visitors. Anyone wishing access to the adult materials on Stonewall BBS first had to pass through Houston's hair-raisingly exhaustive verification procedures. On the first call to Stonewall, each caller had to fill in a standard questionnaire of personal information - name, address, age, phone number, and so on. Upon completion, the caller was asked if he desired access to any of the adult areas of the BBS. If the answer was yes, the caller was asked which category of materials interested him, and what kind of lifestyle he led. Houston says he used this classification to try and group together people of similar interests within the system. Houston himself was gay, and had a fair amount of gay-oriented materials on the system.

Next, all callers, regardless of whether they filled out both questionnaires or only the first one, were placed in the "new users romper room" area of Stonewall. Callers still wishing to proceed with registration were then led into an automated callback verification sequence, where the BBS software called back the number submitted by the caller. After callback verification, new callers were still restricted to the new users romper room. In this area, callers could sample limited, non-adult-oriented sections of the BBS, but could not upload or download any files.

In the evenings, Houston read through all new applications for the day. He called back all applicants personally the next day, and verified their applications by voice. In certain cases, such as

borderline-age applicants stating they were college students, he checked their references to make sure they were genuine. All callers who passed this verification step then had to send Houston photocopies of their driver's licenses, after which they were finally given access to the adult areas. Houston's verification process was quite an extended routine, but he says he fully verified over 600 callers using this method.

Houston's troubles started when he fired a teenage employee of his video store business for basic laziness. According to Houston, directly upon being fired the ex-employee went to Sheriff Earle Lee of Douglas County, Georgia, the county in which Stonewall BBS operated. He told Sheriff Lee that Houston was running a nationwide network for the distribution of homosexual materials from the Stonewall BBS. The police moved like lightning on these charges. The employee was fired Saturday, September 8, 1990. Two days later, on Monday, September 10, Sheriff Lee and his deputies hauled Houston off to jail and confiscated his computer equipment.

The arrest and seizure warrant, and the indictment that followed, contained four counts against Houston: 2 counts of distribution of obscene materials; 1 count of solicitation of sodomy; and 1 count that Houston "provided a medium as to which sexually explicit materials containing children could be found". The counts in the indictment were based on the testimony of two of Houston's ex-employees: the one who started the legal process against Houston, and another who had been fired some months earlier.

The second ex-employee, according to Houston, was a computer hacker whom Houston had suspected of stealing some money from his business, then altering his business computer records to cover it up. For the indictment, both ex-employees testified that Houston had created sex videos with them (another allegation he entirely denies), and that he had given them both access to the adult areas of his BBS while they were his employees, even though they were 17-year-old minors. Houston thought they were 18 years old until then. Hous-

ton entirely denies all accusations.

After sitting in jail for a couple of months, Houston went to trial and lost. The prosecuting attorney was D.A. David McDade of Douglas County. Houston paid his own lawyer \$10,000, and had no money left to pay for an appeal after the trial.

Houston says the trial against him was filled with misconduct. Perhaps his most shocking charge is that the State did not use a police expert or independent expert to evaluate the materials contained in his confiscated BBS. Instead, they put his own ex-employee, the computer hacker who testified against him for the indictment, in charge of investigating the computer to conduct the State's own inspection of the evidence! This amazing approach bore no resemblance to normal procedure, which was to send seized evidence requiring technical examination to the Georgia Crime Lab. If Houston's charge is true, this is fatal contamination of the evidence - placing key evidence against the accused in the hands of a hostile and complaining witness!

Further, Houston says the hacker/ex-employee made the most of his opportunity, tampering with the BBS computer files to create damning evidence against Houston. Specifically, Houston says that computer files were altered before trial to make it look like he had been using his BBS to solicit two 17-year-olds. There were indeed two 17-year-olds on Stonewall BBS, but Houston had given them access only to a special "teen board" area he set especially up for them. Houston believes his ex-employee, while he had control of BBS computer, raised the 17 year olds' security level to make it look like they had access to the adult materials, and added suggestive messages addressed from Houston to these callers.

Houston moved for inspection of the computer prior to trial, but the judge denied his motion. Houston also lined up 3 different computer experts to check the BBS system for tampering using software tools for inspecting the computer's hard disk, and to testify to the tampering at trial. For reasons that are unclear, his lawyer refused to use

the experts. Finally, Houston wanted to show the judge at trial how his BBS worked and how he maintained system security and age verification, but the judge would not permit the demonstration.

In the end, Houston was convicted of a single count of sexual exploitation of children, under Georgia Statute 16-12-100-B6. This conviction classifies him as a craven sex offender, equivalent to a rapist. The only evidence supporting his conviction were the computer records regarding the 17-year-olds submitted by the ex-employee hacker. As mentioned above, Houston's lawyer failed to offer expert testimony disputing the authenticity and accuracy of the computer records regarding the 17-year-olds' status on the system. Houston's lawyer further failed to obtain testimony from the 17-year-olds themselves, which could have shown the computer evidence to be false. Houston seems bewildered at the approach taken by his lawyer. The only reasoning the lawyer seems to have given him for these seeming enormous strategic lapses is that such attempts to discredit the state's case would only make Houston look worse in the eyes of the judge.

Houston says there is no law against precisely what he's been imprisoned for, and says the prosecuting D.A. said the same thing publicly after his conviction. Despite the unanimous confusion over whether Houston is actually guilty of any wrongdoing, he remains in jail for the time being. Houston is due to be released in September, 1993, and says he plans to head out of Georgia as soon as he is permitted to do so. Douglas County has not been very kind to Robert Houston. It is hard to say exactly what role local intolerance of his sexual preferences might have played in the insulting abridgement of personal rights Mr. Houston has suffered through, but it would explain the shocking manner in which his prosecution was carried out.

The story above is based solely on the interview with Mr. Houston. Clearly there are some areas in which it would be useful to know the other side of the story. Nonetheless, we can make some useful observations looking at things



just from his side of the cell bars.

First, here is a sysop in jail for running an adult bulletin board. For those who refused caution up to now for lack of evidence that people are getting in trouble: here is your evidence. Take note that Houston was not convicted of having any obscene or child pornography materials on his BBS. Those carrying such materials could end up in hotter water than he did if they are ever exposed to the court process.

Second, sysops reading this may be comforting themselves that the exact freakish course of events Houston suffered through will not likely be repeated. However, Houston's case is also illustrative of the way things can break down and land you in a heap of trouble. In his case, canning a lazy employee ended up landing him in jail, convicted of being a sleazy, child-molesting BBS sysop. Future sysop convictions, whenever and wherever they occur, can easily follow similarly tortuous paths from precipitating cause to miserable result. Those who think they are clever enough to stay out of trouble while running a hardcore porn board may see their whole scheme unravel due to one forgotten loose end.

Third, Houston's situation provides yet another example of the institutional amnesia still inflicting far too many law enforcement authorities and agents: they forget all about the Constitution, especially the First Amendment, when they seize a BBS. Houston's BBS was not adjudged to have any illegal mate-

rials falling outside the First Amendment's protection of freedom of speech and of the press. His conviction, contrived though it may have been, was only for certain conduct. Yet his BBS was taken down, and likely will never be resurrected, at least in Georgia.

There is a danger of reading too much into what happened to Robert Houston (except for sysops knowingly running hardcore porn boards, who should pay very careful attention to his plight). His peculiar treatment at the hands of the Douglas County legal system does not mean that all BBS' have suddenly become unsafe. Running a BBS carries about the same risk as it always has. If you are reasonable in how you run your BBS, and don't knowingly get involved with anything illegal, your chances of legal trouble are next to nothing. Think of Robert Houston as a sysop who tried very hard to be careful while running a BBS with contents that were riskier than average, and one day got hit by lightning.

THAT'S ENTERTAINMENT!

Just as this column was being readied for submission, WNBC's "News at Eleven" showed the first installment of a news series to be aired all week called "Software: Hard Porn." This astonishing piece of television journalism starts off with a surveillance film showing two men on a couch discussing a snuff movie they'd like to make using a little kid. The narrator's voice-over informs us that this time, the snuff guys are talking about procuring their dispensable prey using a computer bulletin board . . .

The segment segues into much milder territory, next featuring the talking head of Bruce Fancher of MindVox (a NYC Unix-based BBS system and Internet access site) discussing the easy availability of adult GIF image files on BBS'. Several shots of files supposedly taken from BBS' are shown, mostly just girlie pictures almost too tame for Playboy. Surprisingly, the voice-over informs us that such pictures are all quite legal. They are legal, of course. The surprising part is that the TV folks got it right.

But don't relax yet. In the very next breath, we are told that the same BBS' carrying the adult image files also play host to pedophiles, who seek out youngsters and attempt to arrange illicit meetings for sexual purposes. Through the magic of TV sequencing, those cute girlie shots are instantly converted from admittedly protected free speech to cheesecake posters on the walls of dens of sin inhabited by sleazy, lecherous old men. The dens of sin, of course, are the BBS' in which they prowl.

So ends the first short episode of "Software: Hard Porn", with the promise of more rating-boosting tidbits about the sleazy world of BBS' in tomorrow's news report.

This is a good postscript to the Houston piece. It shows that not only did someone with an adult board get nailed, but the anti-BBS porn drumbeat is steadily swelling in the public consciousness. This is not the first news show covering the BBS porn angle. Last year, WOR in New York ran a story with a similar theme. But as Howard Stern likes to remind his listeners (after his show on WOR ended), no one watches WOR, while WNBC is one of the real TV stations in the New York market. Those who are committed to running hard core porn BBS' should watch their backs.

[Lance Rose is an attorney practicing high-tech, computer and intellectual property law in Montclair New Jersey, and is available on the Internet at elrose@well.sf.ca.us and on CompuServe at 72230,2044. He works with shareware publishers, software authors, system operators, technology buyers, interactive media developers, on-line database services and others in the high technology area. He is also author of the book SYSLAW, a legal guide for bulletin board system operators, available from PC Information Group (800)321-8285. - Editor]

DIRECT CONNECT

THE MEETING WORKS - ONLINE SERVICE FOR CONVENTION PLANNERS

Adult education has taken on a new meaning in the past few years. Basically, people have begun learning about new fields, technical techniques, and other tips and tricks of their chosen profession by attending seminars and conventions. A number of companies have sprung up that do nothing but take a traveling road show to different cities to demonstrate everything from TCP/IP to how to sell air conditioners. Corporations often have entire in-house meeting planning staffs. And yes, many computer magazines are now offering their own meetings, conventions, trade shows, etc. We ourselves have rather accidentally wound up in the convention business with the Online Networking Exposition and BBS Convention.

Given the typically pricey registration for such two or three day educational seminars - often priced between \$800 and \$1500 just for registration, you would think they would go begging. Apparently not. For many of the popular seminars, you either sign up early or don't get in. In many fields, this is where the ongoing education is happening, and Universities are in general woefully behind in offering up to date information.

John Mackenzie has not only noted the phenomenon of meetings, seminars, and conventions, but he's put up a BBS titled THE MEETING WORKS at (212)737-6932 devoted to the esoterica involved in putting one on. The system is quite colorfully done using Galacticomm's MAJOR BBS software.

According to Mackenzie, "The hospitality and airline industries do a fine job of telling people where to hold meetings and how to get to them. But this doesn't help those who give bad presentations in beautiful rooms after they arrive. And, during these days of job elimination, meeting quality can be far more

crucial for the future of those who give them than those who come to them. The Meeting Works goes beyond pools, palm trees and room rates to give sales and association executives combat-tested information on improving concepts and content before room lights go down, or exhibits go up."

The Meeting Works presently covers eleven areas:

- 1) Sales meeting outlines and ideas
- 2) Generic scripts and meeting modules
- 3) Meeting themes
- 4) Room survey and setup suggestions
- 5) Tech tips on staging and equipment
- 6) Exhibit case histories
- 7) Sales and training seminar situations
- 8) A writers showcase and idea bank
- 9) Association meeting methods
- 10) Sales awards and incentives, and
- 11) A forum on interactive group decision systems.

Most of the files available online in categories 1, 2 and 3 can be modified easily to meet different product and presentation needs.

A classified ad section sells space to meeting facilities and services, while questionnaires poll buyer opinions. User feedback reports are available to those placing ads. Writers and designers earn free time on The Meeting Works by uploading copyrighted samples as showcase demos for potential clients. Live, special interest "keyboard conferences" are another subscriber feature. Color graphics files, showing trade exhibit setups and meeting room layouts, will soon be added.

Major meeting organizations have been invited to appoint subject authorities to answer subscriber questions. Mackenzie hopes The Meeting Works will help planners increase their value to management by expanding the range of contributions they can make to meeting conduct and content. THE MEETING WORKS, 957 Parke Avenue, New York, NY 10028; (212)737-8910 voice; (212)737-6932 BBS

MAKING BREAD ONLINE

Man does not live by bread alone. On the other hand, there have been few reported incidents of it hurting anybody. And the smell of home made bread baking in the oven has virtually defined the smell of home for thousands of years across most cultures.

Currently a bread making mania that has broken out across the U.S., and yours truly has become thoroughly captivated by the concept. As a hobby, I've made breads for a number of years using the old fashioned hand-kneading technique - tedious, but at least boring. But in the past year or so, a wave of Japanese bread making appliances have hit pay dirt here in the U.S. These little breadmakers allow you to measure in a few ingredients, push a button, and about 3 hours later the whole house fills with the aroma of freshly baked home-made bread. It mixes the ingredients, kneads the lump, allows it to rise, kneads it again, allows it to rise again, and finally bakes it. The result is a fully baked loaf of bread with very consistent results. Entire books of breadmaker recipes are currently a hot item in the cookbook category.

The devices became the hot item of Christmas 1992. Typically, they come in two sizes - one pound loaf capacity, and one and a half pound loaf capacity. In the Denver area, by December 15 you could not find a 1.5 lb loaf maker in the state. The little 1.0 pounder's were going begging.

Who started all this? One of the legends of direct mail marketing is a man named Drew Alan Kaplan who publishes one of the most fascinating direct mail catalogs in the business. The DAK catalog is one piece of junk mail welcomed in almost every mailbox it lands. Typically it runs about 30 pages of gadgets, telephone devices, audio and video geegeaws, and in the last year or so, computers and CD-ROM players. Rather than the typical catalog fare of dry descriptions, it's written in a personable, conversational tone coming from the point of view of "look what neat gadgets I found and can sell to you for cheap."

DAK took a \$400 Japanese appliance, the breadmaker, that was widely failing to sell in this country, and remarketed it at \$169. They sold 500,000 of them, and more importantly, launched breadmakers in the United States. There are nearly a dozen models available now and almost all department stores carry them. We think DAK did it.

DAK has been one of the most progressive direct marketing firms in the business, and they use the technology. After the move to market personal computers and software, they found a number of their customers needed help using the devices. Since one of their hallmarks is a 30-day risk-free trial period on any purchase, it became an easier thing to help customers get some use of their new computers than to accept them back on a return. So they set up the DAK Online Resource Center.

The DAK Online Resource Center (DORC??) operates at (818)715-7153 using TBBS software. This is interesting in itself. eSoft's TBBS actually stands for The Bread Board System - an allusion to the engineering practice of building prototype circuits on a circuit "board" that allows easy configuration and wiring changes during design and development of electronic circuits. In the vernacular of the EE world, this came to be known as "breadboarding." While TBBS has nothing to do with bread, the pun is obvious. And while we don't know how DAK chose this software or what purchase arrangements were made, their Breadmaker has been seen in abundance at the eSoft offices.

The DAK Online Resource Center is also reachable by FidoNet Netmail at 1:102/809 and the system operator is Tom Krogh. The system offers message and download areas for various product categories including audio, computer hardware, software, CD-ROM, and household goods. We found the breadmaking area fascinating of course. There were files on the Turbo II model as well as a new \$169 Turbo IV model that makes the biggest loaf in the business with a 2.0 lb rating. But there were also files on what to do about burnt



bread, bread that isn't done in the middle, bread that rises too high, dark crust, high altitude baking, recipe substitutions and general tips and troubleshooting. DAK not only sells the breadmakers, but you can order replacement parts for the various models offered.

The system also has a monthly BBS special offer. This month, a CD-ROM title previously reviewed in Boardwatch is PHONE DISC. This is a three-disc set listing telephone numbers and addresses for everybody in the country. Perhaps not quite, but the BUSINESS disk lists over 7 million business listings while EAST and WEST each provide basically white pages telephone book listings of residences EAST and WEST of the Mississippi River. DAK offers this set at \$149.90 plus \$6.90 shipping and handling.

The system is decoratively laid out and reasonably easy to use. We were disappointed to learn we could not list everything DAK currently has for sale, and actually order online. For most items it referred you to their voice order line at **800-DAK-0800** to actually place an order. Given that the company does run a BBS that could easily process the order, and also offers FAX ordering at **(818)888-2837** and even TDD access

for the hearing impaired at **(800)888-6703**, this seemed curiously retro. With eSoft's TDBS package they could easily put their entire inventory online now.

According to DAK spokesman Brian Eggars, "We currently mail several million catalogs per month and 800 voice sales from the catalog swamp everything else, including our outlet store here in California. We haven't quite figured out how to make the BBS handle any substantive portion of that yet on just a few telephone lines. But we're working on it, and even looking at other possibilities involving the larger commercial online services."

The system does allow you to add your name to the catalog mailing list online. And since the company does accept returns from customers that just decide they don't particularly like what they've ordered, the BBS does list "used" items at a pretty significant discount. You don't find mention of that in their catalog. In this way, using the BBS you can order items returned by others and do so at significant savings. But ultimately, the system is currently acting as more of an after-sale product support system than it is as an online sales channel.

Actual direct sales online have never taken off anywhere that we can tell.

Many have tried it, with mixed or poor results. It is interesting to observe what the king of direct mail does with BBS technology to augment an existing direct mail catalog operation. DAK Industries Inc., 8200 Remmet Ave., Canoga Park, CA 91304; **(818)888-8220**.

FEDWORLD GATEWAY BBS

The Federal Government has overall made excellent use of BBS technology and there are nearly a hundred federal government bulletin boards operating publicly today with many more private systems used for various internal purposes. In the past, our experience with the operators of government bulletin boards has been almost universally positive. Most of the operators have been internal advocates of bulletin boards and persuaded their departments to put them up for the benefit of the public and to aid in the public information mission most governmental departments have.

The National Technical Information Service (NTIS, not to be confused with the National Institute for Technology and Science - NIST) is dedicated to assisting private businesses with technical information to make them more competitive worldwide.

Despite current efforts to put all government online services under the Government Printing Office with the GPO WINDO program, NTIS has decided to do its own system. They call it FedWorld Gateway. It operates at **(703)321-8020** using the MAJOR BBS software. Tom Walker is project director and Ken Royer operates the system. Hosted on a 50MHz 80486 computer with two 1.2 GB drives, the system currently sports a total of 46 9600bps access lines.

The system provides a wealth of information regarding a wide variety of government topics. I previously worked in the Defense industry and for a good bit of that time in Logistics - producing technical manuals primarily. The system sported a fairly huge file area of military specifications and we were surprised to find a copy of MIL-M-38784

available for download. This is a essentially a government style book for writing technical manuals. There were dozens of other milspecs available as well.

We also found a large library of information about CALS - the Contractor Automated Logistics System - this is actually an entire system defining the way contractors maintain logistics data, including manuals, but also part information, provisioning, etc. in a common data format.

We were even surprised to find a library of satellite GIF images of earth and North America.

But the forte of the FedWorld Gateway system is the gateway. MAJOR BBS offers a fairly unique function among BBS software products. It has the ability to outdial to other BBS systems. You can dial IN on one line and use a second line to dial OUT to another system somewhere else. Some chat services use this feature to "link" systems from different cities to form impromptu national chat "parties." FedWorld uses it a bit differently. Bob Bunge has tracked down some 91 federal bulletin board systems and put them all on a single massive menu. You can pick one of these systems, and the service automatically dials OUT and connects you to that government BBS. The systems are located all over the country. And the economic sense of dialing long distance IN to FedWorld - which in turn dials long distance OUT to the other bulletin boards, is a bit dubious. But the concept of putting all government bulletin boards and online services on one accessible menu is inspired.

Despite Bunge's investment of some 300 hours of effort in tracking down all these bulletin boards, he's graciously allowed us to reproduce the list - with direct access telephone numbers. But the FedWorld Gateway service may be the best effort yet at bringing the increasing number of federal online information services under one access point. National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; (703)487-4850 voice; (703)487-4650 voice mail; (703)321-8020 BBS.

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Dallas Remote Imaging Group BBS
P.O. Box 117088, Carrollton Texas 75011-7088

THIS MONTH'S LIST - WASHINGTON D.C.

Mike Focke has been keeping a list of Washington D.C. bulletin boards for as long as we've known Washington had any. It is probably one of the most comprehensive lists in the country and is issued monthly. The list makes the rounds in the file DCBBmmy.ZIP where mm is the month and yy is the year. It is available for download from the INTERCONNECT BBS at (703)425-2505. Focke has graciously allowed us to reproduce his list herein. Currently, the list sports some 540 active entries.

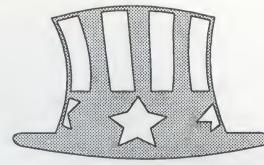
Washington D.C. is awash in high tech bandits operating around the beltway and of course there are a large number of federal government bulletin boards in the area. The area is also home to the Capitol City User Group which operates several bulletin boards including a

member information exchange at (703)742-6213. Tom Mack, author of the original RBBS BBS package in the early '80s designated this user group as the distribution point for his public domain BBS package. As a result, Washington D.C. is also the capitol of the world of RBBS software with some 91 systems (16.9%) using this particular software package to operate. An additional 90 systems use PCBoard software which is similar in operation.



FEDERAL GOVERNMENT BBS

List of 111 Bulletin Board Systems



ABLE INFORM	(301)589-3536	Nat Rehab Center & Data of Asist. Tech
ADA AALS/Navy	(202)342-4568	Ada Language Sys/Navy Bulletin Board
ADA Tech Supp. BBS	(804)444-7841	Assist interested in ADA
ADAIC	(703)614-0215	ADA Information
ALF	(301)504-6510	National Agricultural Library BBS
ALIX	(202)707-4888	Automated Library Info eXchange
ASN	(703)746-2645	
ATTIC (EPA)	(301)670-3813	Alternative Treatment Tech Info Cent.
Applied Modeling	(919)541-325	EPA Atmospheric Models
BOM-BBN	(202)501-0373	Bureau of Mines-Bulletin Board Net
BRX Info Corner	(703)756-6109	BBS for IRS Employees
BULLDOG WEST	(805)985-9527	Harpoon support
BUPERS Access	(703)614-8059	Navy Personnel Information
CABB	(202)647-9225	Passport Info/ Travel Alerts
CASUCOM (GSA)	(202)653-7516	Interagency Shared Serv/Resources
CERCNET (DARPA)	(800)331-3808	Concurrent Engineering Research Net
CIC-BBS (GSA)	(202)208-7679	Consumer Information Center
CLU-IN (EPA)	(301)589-8366	Superfund Data and Information
CPO-BBS (Census)	(301)763-4574	Jobs at the Census Dept
CRS-BBS	(202)514-6193	Amer. With Disabilities Act Info
Census-BEA (Census)	(301)763-7554	Census BEA Electronic Forum
Computer Sec. (NIST)	(301)948-5140	Nat Comp Sys Lab Comp Sec BBS
DASC-ZE	(703)274-5863	PC Info and files
DCBBS (DC Govt)	(202)727-6668	DC Government Information
DMIE (NIST/NCSL)	(301)948-2048	NIST/NCSL Data Manage Info
DRIPSS (EPA)	(800)229-3737	Drinking Water Info Process Support
EBB	(202)482-3870	Economic data and info
ELISA System	(703)697-6109	DoD Export License Tracking Sys
EOUSA-BBS	(202)501-7521	BBS for U.S. Attorneys
EPUB	(202)586-2557	Energy information and data
Energy Information	(202)586-8658	Petrol, Coal, Electric, Energy Stats
FAA Safety Exchange	(800)462-3814	Small Plane Safety Reports & info
FCC Public Access	(301)725-1072	Equip. authorization status advisory serv.
FCC-State Link	(202)632-1361	FCC daily digest & carrier stats/report
FDA's BBS	(800)222-0185	FDA info and policies
FDA/DMMS	(301)443-7496	PMA, IDE, 510k & guidance documents
FEDERAL BBS	(202)512-1397	GPO and Govt Data (Fee Based)
FEDIX	(800)783-3349	Links Fed Data to Higher Education
FERC-CIPS BBS	(202)208-1781	Fed Energy Regulatory Commission
FHA BBS	(202)366-3764	FHA staff and interested public
FMS-BBS	(202)874-6817	Inventory management data & programs
FRBBS (NIST)	(301)921-6302	FRBBS - Info on Fire Research
FREND #1 (Natl Arch.)	(202)275-0920	Fed. Reg Elect. News Delivery
Fed Whistleblower	(202)225-5527	Report fraud, abuse, waste in US Govt
Fort Benning	(717)686-3037	
Fort Drum	(315)772-7836	
Fort Leavenworth	(913)684-7675	
Fort Meyer	(703)524-4149	Officers' Club
Fort Richie	(301)878-4573	
GPSIC	(703)866-3894	GPS & Loran Info, Status & Data
GPSIC	(703)866-3890	Information on Global Positioning Sys
Gulfline (EPA&NOAA)	(800)235-4662	Gulf Coast Pollution Info
HSOL-BBS (HHS & UMd)	(301)985-7936	Head Start BBS (Region III)
HUD-N&E BB (HUD)	(202)708-3563	HUD News & Events BB. P R
IHS-BBS (HHS)	(301)443-9517	Indian Health Service BBS
IRSC BBS (GSA)	(202)501-2014	GSA information and lists
JAG-NET	(703)325-0748	Navy Judge Advocate General
Kelly AFB	(512)925-9096	
LC News Service	(202)707-3854	Library of Congress News Service
Labor News	(202)219-4784	Dept of Labor information and files
Langley AFB	(804)764-3995	
Malstrom AFB	(406)731-2503	
Megawatt 1	(202)586-0739	Information on energy and DoE
Metro-Net	(202)475-7543	Army Morale, Welfare, and Rec.
NADAP	(703)693-3831	Navy Drug and Alcohol Abuse Prev.
NASA Spacelink	(205)895-0028	Education affairs, flight data, space history
NAVTASC	(301)238-2131	NAVCOMTELSTA Washington DC
NCJRS-BBS	(301)738-8895	National Crimrial Justice Refer. Sys
NCTS BBS	(202)475-7885	Navy Computer & Telecom Station
NDB-BBS	(301)436-5078	Human Nutrition Information Service
NGWS BBS	(703)602-1916	Naval Gun Weapon System BBS
NIDR Online (NIH)	(301)492-2221	Nat. Institute of Dental Research
NIST ACTS	(303)494-4775	Auto Comp Tele. Service, PC to NBS Time
NOAA Space Lab	(303)497-5042	Solar flare and geomagnetic data
NOAA-ESDD (NOAA)	(202)606-4662	NOAA Earth Sys Data Direct
NPS-BBS (EPA)	(301)589-0205	Nonpoint Source Program BBS
NRRC	(518)370-0118	Naval Reserve Readiness Center
NSSDC/NASA/Gd	(301)286-9000	The NASA NODIS Locator Sys.
NUPERS ACC BBS	(703)614-8059	
Naval Justice School	(401)841-3990	
OASH-BBS (NAPO)	(202)690-5423	AIDS Information & Reports
OEA BBS	(202)208-7119	Interior's Off of Environment. Affairs
OERI BBS	(202)219-2011	Educational Research and Improvement
OIS	(202)514-6102	US Bureau of Prison employees
OPBO-BBS	(202)482-1423	Internal comm. for DOC employees
Offshore-BBS	(703)787-1181	Off Shore Oil & Gas Data
PIM BBS (EPA)	(703)305-5919	Pesticide Information Network
PPIC-BBS (EPA)	(703)506-1025	Pollu. Preven, Clean Product, Ozone
Patent Lic. BBS(NTIS)	(703)487-4061	Speeds acc. to Fed lab research
PayPerNet #1 (OPM)	(202)606-2675	Fed. Pay & Per. Management BBS
Port O'Call	(504)947-8253	Navy Computer & Telecomm. Command
QED-BBS (USGS)	(800)358-2663	Qk Epicenter Determ and EQ data
SALEMBUG-BBS	(202)646-2887	State and local FEMA user groups
SBA On Line (SBA)	(800)859-4636	SBA Information and data
SBAI-BBS (SBA)	(202)205-6269	Small Bus. Admin internal BBS
SESD-EBB	(703)285-9637	PC software & contract Info
SRS	(202)634-1764	Fed. R&D budget, Tech labor market stats
STIS (NSF)	(202)357-0359	Science & Tech Information Sys.
SWICH BBS	(301)585-0204	EPA_Solid Waste Management
S. Weath. Data (NWS)	(301)899-1173	Sample data from Fee Based Sys.
Shaw AFB	(803)668-4316	
TEBBS (OGE)	(202)523-1186	Office of Government Ethics BBS
TELENEWS	(202)586-6496	Data and info on Fossil fuels
USA-GPCS BBS	(703)285-9637	Army Info System Software
USCS-BBS (Customs)	(202)376-7100	Cust. and Exchange Rate Data & Info
USGS QED	(303)273-8672	Earthquake epicenter data, geomagnetism
USGS-BBS (USGS)	(703)648-4168	Geological Survey BBS/CD-ROM Info
USNO ADS	(202)653-1079	GPS data, sunrise/set/surveying data
USNO Time of Day	(202)653-0351	USNO Atomic clock, trans. ASCII time string
VA-BBS	(202)523-7399	VA info and PC programs
WSCA-BBS	(800)735-7396	Board of Wage & Service Contract Appeal

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Metropolitan Area

Area Code 202, 301, 703

List of 540 Electronic Bulletin Boards

Courtesy Mike Focke

The Interconnect BBS (703) 426-2605

BBS:	540
POPULATION:	3,923,574
AREA:	3967 sq miles
POPULATION Per BBS:	1 : 7,266
BBS Per AREA:	1 : 7.346 sq miles

BBS	PHONE	BPS	SOFTWARE	BBS	PHONE	BPS	SOFTWARE
1! Globenet	301-595-5776	9600	Major BBS	BearFacts	703-323-9434	9600	PCBoard
3Winks #1 (S. Staten)	301-590-9629	2400	RBBS	Beda Board (P. Beda)	703-893-8262	14400	PCBoard
A La Modem (L. Dye)	703-358-5360	2400	WildCat!	Beltway Bandit's (M. Madden)	703-644-9776	9600	PCBoard
A-COM Data Services	703-631-1212	2400	Unknown	Bendix Users Group	301-794-9036	2400	Opus
A.T.I.S (B. Downing)	703-242-3520	2400	GT-Host	Benez BBS (Z. Benz)	301-924-2877	9600	GT-Host
ABLE INFORM	301-589-3563	2400	PCBoard	Best of the Best (Kreiger)	703-754-7392	14400	WildCat!
ABySS (S. Rose)	703-823-6591	9600	QuickBBS	Best of Times (T. Raines)	301-773-6317	2400	WildCat!
ADA ALS	202-342-4568	2400	PCBoard	Between the Lines	202-939-5211	2400	PCBoard
ADAIC DOD ADA Language	703-614-0215	2400	RBBS	Bikini Atoll	301-949-0748	2400	Auntie
ADS \$ #2 (B. Brodka)	301-565-9560	2400	Major BBS	Biscayne Villa	703-243-5248	9600	WWIV
AIM Net (C. Maranto)	202-371-9053	2400	Opus	Bit Bucket (G. Padron)	301-384-8751	2400	Spitfire
AIRLIFT ONE	301-981-3295	2400	SearchLight	BizNet (R. Norsworthy)	301-297-9255	2400	RBBS
ALEP	202-429-1118	2400	RBBS	Black Moon Rising	703-263-0508	2400	Roverboard
ALF	301-504-6510	9600	RBBS	Blackmoor Castle (K. Tilton)	703-729-5679	9600	WildCat!
ALIX II	202-707-4888	2400	TBBS	Blue Board	301-649-4991	2400	WWIV
AMNet	202-789-2527	2400	RBBS	Bonfire (J. MacDowall)	703-318-9779	14400	Unknown
AMRAD (L. Kesteloot)	703-734-1387	2400	PCBoard	Brassworx	703-715-0092	9600	Fido
APPLES OF EVE (W. Fire)	301-990-7565	14400	WildCat!	Broadcaster's Info Center	301-654-6462	14400	PCBoard
ARMUDIC	703-883-0792	2400	Unknown	Brodmann's Place	301-843-5732	14400	RBBS
About Time (R. Matthew)	301-794-6516	2400	RBBS	Broken Sword	703-527-9814	14400	Unknown
Access Denied	703-998-2958	9600	QuickBBS	Bullet'n Board (T. Metaksa)	703-971-4491	2400	RBBS
Access<=>Internet (Arnold)	703-358-9022	14400	Maximus	Bureau of Health Prof	301-443-5913	2400	WildCat!
Ace's World	703-922-9883	2400	Unknown	Byte Buster's	301-843-9276	14400	SearchLight
Addict's Attic (LeGuellec)	301-428-8998	9600	Opus	CAD Duck (S. Minton)	703-631-2559	9600	PCBoard
Adult * Fantasy \$	703-352-2945	2400	Unknown	CANU	301-948-4186	9600	PCBoard
Adult*Bliss	703-642-8464	2400	Major BBS	CAPCOM Inc	202-244-3045	2400	Unknown
Advanced Comp Creations	301-206-3211	14400	PCBoard	CCIB Cyclan	703-866-3739	9600	TBBS
After The Revolution	703-241-5652	2400	Unknown	CHUG Heath/Zenith (Heintze)	703-550-9164	2400	Fido
Afterlife	202-723-7187	2400	Unknown	CLU-IN EPA	301-589-8366	2400	PCBoard
Agriculture	301-436-5078	2400	RBBS	CONTECH (R. Schniebold)	301-340-2212	9600	PCBoard
Alternative	301-593-4912	2400	Maximus	CPAFUG (B. Bennett)	301-989-8960	9600	RBBS
Altered Egos (K. Gates)	703-352-3865	14400	WildCat!	CPCUG Member Info eXchg	703-742-6213	9600	RBBS
Another World	202-333-5230	2400	Unknown	CPCUG Member Info eXchg	301-738-9060	9600	RBBS
Arachne's Web	703-765-1288	2400	RBBS	CSRC	301-948-5718	9600	RBBS
Arlington S/V Exchg	703-532-7143	9600	PCBoard	Camelot's Court	301-870-6035	2400	WWIV
Arlington Infonet	703-536-7754	2400	Unknown	Cannon Fodder	301-424-3614	9600	PCBoard
Artificial Horizons	301-353-0593	9600	Unknown	Capital Conn (B. Shuck)	703-280-5490	14400	PCBoard
Aster-Pro Astrology	202-775-9424	2400	RBBS	Capitol Hill Hub \$	703-709-6436	2400	Major BBS
At the end of Universe	301-449-6512	9600	WWIV	Capital Area Net (R. Wood)	301-499-4671	1680	GT-Host
Atavachron (T. Stewart)	301-953-3945	14400	WWIV	Captain's Call (R. Mason)	703-920-5608	2400	WildCat!
Atlantis Classifieds	301-621-4257	2400	TBBS	Cascades Etc (N. Moschkin)	301-649-1050	1680	RA
Atlantis Outpost	703-222-2196	9600	WWIV	Cat House	703-525-1731	9600	Maximus
Atlantis	703-335-0840	14400	WWIV	Census Bureau Personnel	301-763-4574	2400	RBBS
BBBB #2	301-292-1482	14400	WildCat!	Center For Fire Research	301-921-6302	2400	TComm
BBS Mumps	301-948-6825	2400	RBBS	Centerville (S. Crossland)	703-830-4298	2400	RBBS
BBSVAPL (D. Holt)	301-384-3672	14400	Maximus	Chapter 11 (R. Cycholl)	703-335-5545	14400	Unknown
BXR ISFUG (M. Crockford)	703-756-6109	2400	RBBS	Chelsea Systems	703-922-4077	2400	RBBS
Bailey's Photo (Allen)	703-280-4379	2400	RBBS	Chevy Chase (B. Larkins)	703-549-5574	2400	PCBoard
Banks of Fergussi	703-271-4080	9600	Unknown	Chief's Den (S. Leonard)	703-339-2468	14400	Force
Baobab (B. Barad)	202-296-9790	14400	RA	Church Without Walls	202-966-2824	2400	Opus
Barbeque World	703-379-9296	2400	WildCat!	Cluster (J. DeCarlo)	703-525-3715	2400	Opus
Barneysville	703-528-0124	14400	RBBS	Coin of the Realm	301-585-6697	2400	PCBoard
Baron Carlos's Castle	202-863-1493	14400	Maximus	Collision Theory (J/K Mann)	703-503-9441	2400	QuickBBS

TOP SOFTWARE TITLES

RBBS	91	16.9%
PCBoard	90	16.7%
Wildcat!	77	14.3%
WWIV	37	6.9%
Maximus	21	3.9%
Opus	18	3.3%
TBBS	17	3.1%
Remote Access	15	2.8%
GT-Host	12	2.2%
Spitfire	11	2.0%
Major BBS	11	2.0%

Modem Speeds

14400 bps	113	20.9%
9600 bps	164	30.4%
2400 bps	260	48.1%
1200 bps	3	.5%



BBS	PHONE	BPS	SOFTWARE	BBS	PHONE	BPS	SOFTWARE
Colossus	703-532-1438	14400	WWIV	ENIAC (C. Peters)	301-460-9134	9600	Opus
CommCenter	301-588-0770	9600	MailNet	ENVIRO (K. & L. Riegel)	703-524-1837	2400	RBBS
Commercial&Industrial RE	301-621-5741	1200	Major BBS	East Coast Pub Net	703-538-6540	2400	PCBoard
CommunityLINK	703-765-0501	2400	Major BBS	Edsall-386 (C. Leetch)	703-878-2369	9600	GT-Host
Comp Connect (R. Blacher)	202-547-2008	14400	PCBoard	Eldrich Blvd	703-931-0431	2400	WWIV
Computer Help (J. Nielsen)	703-538-6155	9600	RBBS	Electronic Shopper	301-530-5962	9600	WildCat!
Computer Orphanage	301-292-7955	2400	TBBS	ElectroTech (L. Robertson)	703-780-1180	9600	RBBS
Confusion Central	301-868-3025	14400	WildCat!	Electronic Age (M. Benson)	703-620-0851	14400	Roverboard
Consumer Board	703-759-2001	14400	PCBoard	Electromotive Force (Ceder)	301-699-0763	2400	RBBS
Consumer Info Center	202-208-7679	2400	WildCat!	Electronic Order Express	301-261-6242	9600	FoReM-ST
Coral Reefer	703-264-3962	9600	GAP	Electric Hysteria	703-323-5390	2400	RBBS
Corvette Driver (D. Arline)	703-620-3736	9600	PCBoard	Electric Harbor (J. Storch)	703-730-0542	14400	RBBS
Cosmic Wanderings	703-256-8149	14400	TPBoard	Elite Few (G. Laufer)	703-765-4539	2400	TBBS
Counterpoint BBS	703-590-2624	9600	Unknown	Ellul	202-483-8078	2400	RBBS
Country Kastle	301-870-8729	14400	PCBoard	Empire (R. Smith)	703-352-8142	9600	Maximus
Crash Zone	301-946-0729	2400	RBBS	Energy Source (P. Mann)	202-224-4685	2400	WildCat!
Critical Mass	703-660-8977	2400	Unknown	Enlightened (B. Feist)	703-370-9528	14400	Maximus
Crow's Nest (D. Poole)	301-843-5247	9600	SearchLight	Eternal Equinox (D. Taylor)	703-370-7326	9600	PCBoard
Crunchland	703-549-2814	9600	RA	Europa BBS (D. Hill)	202-588-0465	9600	Maximus
Crystal Cave	703-524-5520	9600	Hermes	Express Access	301-220-0462	2400	Unknown
Cyberdine	703-978-0477	9600	RBBS	FCPF (J. Allison)	703-591-4287	14400	RBBS
CyberChurch (L. Rice)	202-269-2547	2400	Opus	FDA Center for Devices	301-443-7496	2400	RBBS
CyberSpace Empire	301-681-3448	9600	RBBS	FE Telenews	202-586-6496	2400	RBBS
DASC-ZSA	703-274-5863	2400	PCBoard	FEBBS (C. Shea)	202-366-3764	2400	TBBS
DC Govt (D. Weiss)	202-727-6668	2400	Fido	FEDIX	301-258-0953	2400	Unknown
DC Info Exchange (B. Walsh)	703-836-0748	1680	PCBoard	FIDO Exchange (P. Taylor)	703-573-2246	9600	Opus
DC Matchmaker	703-931-4902	2400	Unknown	Falcon Castle II	703-920-1521	2400	Unknown
DGS Systems Alpha (Snyder)	703-323-6423	9600	RBBS	FanTek	301-203-9582	2400	Unknown
DOD Export License I	703-697-6109	2400	RBBS	Fed Energy Reg Comm CIPS	202-208-1397	2400	RBBS
DR. Fido (R. Innerfield)	301-929-1484	2400	Opus	Fielding	703-806-5368	14400	PCBoard
Darwin (P. Olympia)	301-251-9206	9600	PCBoard	File Factory	301-599-8382	2400	WildCat!
Data Connection (R. Cramer)	703-506-8598	1680	WildCat!	Files&More BBS (S. Keen)	703-715-1016	14400	WildCat!
Data Link (R. Thomas)	703-883-9632	14400	WildCat!	Fine & Assoc.	703-379-8672	9600	WildCat!
Dave's Place (D. Watson)	301-888-9528	9600	WildCat!	Fire Domains	301-855-0537	2400	Unknown
Dead of Night (Mehrtens)	703-644-7667	14400	PCBoard	First Due (F. Fowler)	301-949-1927	2400	PCBoard
Dept of Interior	703-787-1181	14400	PCBoard	FlightLine	703-866-1971	2400	RBBS
Dept of Education OERI #1	202-219-2011	2400	RBBS	Flip Side	703-941-1416	14400	Unknown
Deutsch Domain	703-441-0977	14400	Unknown	Flowerchild	202-364-9463	2400	TComm
Dog Solitude (B. Howard)	301-474-6628	2400	RBBS	Foggy Bottom (R. Allbritton)	202-337-2369	14400	Unknown
Dr's Office	703-749-2860	2400	Falken	Free Spirit #1 (R. Warder)	301-283-0917	9600	SearchLight
Duckburg BBS (K. Wood)	301-565-3799	2400	WWIV	Friends Forum	301-217-3913	9600	RBBS
ECCO-Line	703-971-5757	2400	QBBS	GLIB	703-578-4542	2400	TBBS

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BBS	PHONE	BPS	SOFTWARE	BBS	PHONE	BPS	SOFTWARE
GMUltant (W. Grotophorst)	703-993-2219	9600	WildCat!	Jellicle Cat (K. Jacobs)	301-779-5946	9600	PCBoard
GPS Global Positioning	703-866-3890	9600	Unknown	Jim's Dream (J. Wall)	301-248-0906	2400	PCBoard
GSA IRSC	202-501-2014	2400	CTUS	KWIBBLE #1 (C. Lee)	703-243-4820	2400	PCBoard
GSA Schedule BBS	202-501-2661	2400	CTUS	Kat's Lair	703-754-1755	2400	Spitfire
GTSI (J. McKeown)	703-222-5227	2400	TComm	Kelly's Corner	301-927-9374	2400	WWIV
Gannett	703-524-3982	2400	PCBoard	KerbSide (E. Berger)	301-564-4035	9600	PCBoard
Gemini's Playhouse	703-820-3768	2400	RA	La Cantina	703-440-0166	14400	Unknown
Genosha	703-803-8278	9600	WildCat!	LanTek	301-419-3707	2400	Maximus
Genuine Computing Resou	703-551-0095	14400	Citadel	Lazy Day's	703-551-4328	14400	PCBoard
Geoclock (J. Ahlgren)	703-241-7980	9600	RBBS	Lee District DataLine	703-971-0640	2400	RA
Geological Survey	703-648-4168	9600	PCBoard	Lib of Congress News Serv	202-707-3854	2400	TBBS
GhostShip (D. Dutcher)	301-952-0047	9600	PCBoard	Liberty Hall #1 (F. Dorer)	703-255-1285	2400	RBBS
Grebyn Corp's MicroVAX	703-281-7997	2400	Unknown	Life's Like (J. Burns)	703-560-5616	9600	PCBoard
Grey Eagle (K. Taylor)	703-534-0177	9600	Maximus	Light Source (P. Koloch)	301-439-7437	2400	RA
Greystone Manor (B. Harper)	301-773-0822	9600	Spitfire	Little Larry's Place	703-750-1625	9600	WildCat!
Ground Zero	703-533-9880	14400	Falken	Lockshop	202-404-8017	2400	WildCat!
Gryphon	301-384-7238	2400	Unknown	Luckey's Looney Bin	703-591-1697	9600	Maximus
HBX TCOMM (R. Moreau)	703-471-8010	9600	Osiris	MIDI Users Group (M. Rivers)	703-532-7860	9600	PCBoard
HEX - Handicapped	301-593-7357	2400	Unknown	MOLIS	301-258-5016	2400	Unknown
Handiline (J. Mountain)	703-818-2650	9600	RBBS	Main Frame (A. Bilski)	301-654-2554	1680	PCBoard
Hanger 6	703-841-0393	9600	WWIV	Management Consulting #1	301-652-3251	9600	PCBoard
Harbor Lights (D. Banks)	703-799-4478	2400	Roverboard	Marcia's Menagerie	703-352-9619	2400	PCBoard
Harvester's BBS	301-596-1044	2400	TBBS	Mars Station	301-294-5182	2400	WildCat!
Hawk's Dominion (L. Hawke)	301-864-7730	2400	RBBS	Martin's Mortuary	703-237-5650	2400	QuickBBS
Hell	703-237-6272	2400	WWIV	Martin's Domain	301-621-7785	14400	WildCat!
Helm's Deep (J. Alberts)	703-729-5622	14400	RBBS	Maui Bum's Beach Paradise	703-532-8846	9600	WildCat!
Hemispheres	301-341-5846	14400	WWIV	Max's Doghouse (J. Salemi)	703-548-7849	2400	RA
HerbLink II	202-667-7335	2400	SearchLight	Maximum Utility	703-642-3402	14400	WWIV
Highlite (D. Reed)	703-318-1442	14400	Unknown	Mechanized	703-524-0217	2400	WildCat!
Hiram's Oasis	703-938-4990	9600	RBBS	Mega Chips (R. Gallagher)	301-434-1916	2400	WildCat!
His Master's Voice	703-765-6290	9600	RA	MegaMixers	301-949-0183	2400	RBBS
Hokus Pokus	703-330-9488	14400	Unknown	Megabyte (R. Charnock)	202-562-4517	9600	WildCat!
HoloNet Internet Access \$	703-620-8971	2400	Unknown	Megawatts (B. Birnbaum)	202-586-0739	9600	RBBS
Horse Shift (R. Egebrecht)	301-681-3286	1200	WildCat!	Microsoft Federal	202-364-8699	9600	Maximus
Hortline (M. Neff)	703-836-2418	2400	PCBoard	Micro C (A. Smokler)	703-321-8070	14400	RBBS
IBM XT Clone (R. Utley)	301-921-4906	9600	RBBS	micro*Line (M. Younts)	703-425-7451	9600	Major BBS
ICSA	202-364-0644	9600	Unknown	Midnite Rider (J. Reeves)	703-591-5744	9600	PCBoard
IICS-DC-BBS (B. Lau)	301-258-1858	14400	WildCat!	Midnight Special	703-883-9636	14400	WWIV
IRS Stats	202-874-9574	9600	PCBoard	Midnight Blue (S. Tripp)	301-855-2592	2400	WildCat!
Idea Link	301-949-5764	2400	PCBoard	Miller's Light	703-971-2665	9600	WildCat!
Illusions! (R. Maya)	703-802-0382	9600	WildCat!	Miller Time	703-631-0561	14400	Unknown
Imad-ad-Dean	301-656-4714	9600	Opus	Mindless Drivel	301-982-5155	2400	Opus
Impact Zone (S. Moses)	703-237-2173	14400	WildCat!	Mindless Zone (M. Riggs)	703-256-3906	2400	Spitfire
Infi.Network	301-498-6183	2400	Major BBS	Modern Technology	703-920-7564	2400	WildCat!
Infinity 5000	301-949-2450	2400	GT-Host	Moonshadow (B. Wetherill)	301-630-6948	2400	WildCat!
Infinite Perspectives	301-924-0398	9600	RA	Mortar Board (R. Precup)	703-525-3265	2400	RBBS
Infinite Data Source \$	703-642-8705	2400	WildCat!	Mosquito Coast (V. Lowe)	703-255-2908	2400	Turbocit
Info Express (E. Wagner)	301-530-9448	9600	PCBoard	Mothership Connection	301-587-5922	9600	Unknown
Info Exchange (C. Caldwell)	703-354-1104	9600	Opus	Motorcyclist (D. Coyner)	703-709-6318	2400	RBBS
Info*Share \$	703-803-8000	9600	Falken	My Little BBS (J. Gentzel)	703-406-4248	9600	WildCat!
Inst Biological Science	202-628-2427	2400	TBBS	My UnKnown (J. Klemmer)	703-780-6890	14400	Unknown
Intelicom USA (L. Choi)	703-642-1913	9600	WildCat!	Mystery (R. Klein)	301-588-8142	9600	GT-Host
Interlace	703-893-0470	2400	Oracomm	NADAP (L. Rollins)	703-693-3831	2400	WildCat!
Interconnect (J. Morley)	703-425-2505	9600	PCBoard	NAPO/OASH (V. Jones)	202-690-5423	9600	RBBS
Inventory Line - FMS	202-874-6817	2400	RBBS	NAPWA-Link (R. Smith)	703-998-3144	2400	Unknown
Issue Dynamics#1 (S. Simon)	202-408-1163	2400	RBBS	NARDAC (Allen/McDonald)	202-475-7885	2400	PCBoard
JAGNET (S. Bartlett)	703-325-0748	2400	PCBoard	NATCAP Wine and Sail	703-525-1458	2400	RBBS
JP's Place (JP Palazzolo)	703-237-5786	9600	RBBS	NAVTASC	301-238-2131	2400	RBBS

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BBS	PHONE	BPS	SOFTWARE	BBS	PHONE	BPS	SOFTWARE
NCAUG	703-799-1223	9600	Unknown	Private Corner (Spottsworth)	301-942-5571	9600	WildCat!
NCJRS	301-738-8895	2400	Unknown	Productivity Circle	301-445-2873	2400	WildCat!
NCTCUG (D. Gruenthal)	703-820-8969	2400	PCBoard	ProfEx (M. Pearl)	301-907-0349	14400	WildCat!
NOVA (P. Parker)	703-323-3321	14400	Maximus	Professional Surveyer	703-979-9103	2400	WildCat!
NOVAC (B. Korcel)	703-256-4777	2400	RBBS	Prog Place (E. Burleyson)	301-474-1702	2400	RBBS
NTIS	703-321-8020	9600	Unknown	Programmer's Corner (Smith)	301-596-1180	9600	PC
NVL Social	703-450-9330	2400	Major BBS	Programmer's Corner (Smith)	301-621-3424	9600	PC
NWIS (J. Brown)	703-256-7516	2400	RBBS	Programmer Project	703-914-1043	2400	WildCat!
National Genealogy BBS #1	703-528-2612	9600	TBBS	Pronto Info Services	301-468-0175	2400	Unknown
National Archives (Gibson)	703-455-7447	14400	Ultra	Public Access Catalog	301-217-3906	2400	Unknown
Netmark (R. Duffy)	703-892-2216	9600	Unknown	Qualitas - 386^Max	301-907-8030	2400	PCBoard
Network East (H. Hartman)	301-738-0000	2400	PCBoard	RDAMIS (J. Forbes)	703-614-4114	2400	WildCat!
Newington Com-And Comms	703-690-6192	14400	Com-And	REMJEM (R. Mason)	703-503-9410	9600	PCBoard
Next Challenge	703-803-0391	2400	Unknown	Rapid Transit System	703-771-1315	2400	WWIV
Nexus	301-608-2137	2400	WWIV	Readers! of the Lost Arc	301-871-1809	2400	Major BBS
Ninja's Lair (S. Deller)	301-937-6704	2400	Roverboard	Real Life	301-474-2656	1200	TBBS
Nitrous Cloud	301-320-6748	2400	Unknown	Real Estate (L. McGoldrick)	301-384-9302	2400	RBBS
No Place Like Home (Oberg)	301-596-6450	2400	SuperBBS	Reality Check (J. Cady)	703-941-8367	9600	WWIV
No Problem	703-960-8432	14400	Unknown	Reality Check	301-805-7163	2400	Unknown
No-Frills	703-538-4634	9600	PCBoard	Red Dwarf	703-631-0041	14400	WWIV
Not Your Ordinary	301-277-8347	2400	WWIV	Red Sector A (R. Clowser)	301-794-6637	14400	RBBS
NumisNet (SM)(L. Mitchell)	301-498-8205	2400	WildCat!	RoseNet OIS	703-799-2536	14400	PCBoard
OIS Bureau of Prisons	202-514-6102	2400	PCBoard	Running Board (B. Anthony)	301-229-5342	9600	PCBoard
OS/2 Shareware (P. Norloff)	703-385-4325	9600	Maximus	S3-Tech (B. Hampton)	703-451-9509	9600	RBBS
OS/2@Manassas (Bannister)	703-369-0672	14400	Maximus	SALEMBUG (C. Hines)	202-646-2887	9600	PCBoard
Oliver (S. Pettie)	202-965-2658	14400	Unknown	SBA	202-205-7265	9600	Unknown
One Night in Bangkok	202-544-5684	9600	WildCat!	SOFTEXT (J. MacDonald)	202-625-7746	2400	RBBS
OrderWire (M. Jordan)	703-450-9693	2400	PCBoard	SPPT (D. Shore)	202-663-9395	9600	RBBS
Oriental Express	301-322-8293	14400	WildCat!	SQLware (J. Bartling)	703-771-4158	9600	PCBoard
Osmosis	301-657-4944	2400	Spitfire	SRS	202-634-1764	2400	RBBS
Osprey's Nest	301-989-9036	9600	ROS	Sanctuary	301-459-0920	2400	Unknown
Outer Limit	703-938-1562	14400	TG	Sara's Outpost\$ (M. Shoupe)	703-358-9112	2400	Opus
P Street	703-691-4734	2400	PCBoard	Science Line#1 (A. Mondale)	202-328-5853	2400	RBBS
PC Assist (D. Litten)	703-264-1826	2400	RBBS	Scorpio Rising II	703-620-2827	2400	Opus
PC Connection (J. Niemi)	703-356-3813	2400	WildCat!	ScrabbleMania (D. Lee)	703-860-3523	2400	Maximus
PC-HAM (J. Kasser)	301-593-9067	2400	RBBS	Sentry Net	703-815-3244	9600	RA
PD - Arlington Police	703-358-3949	2400	TComm	Shadowland	703-620-2053	1680	WildCat!
Packet Press (E. Balkan)	301-294-0756	14400	WildCat!	Shadow Realm	301-294-6858	9600	WWIV
PainFrame (M. Majewski)	301-649-3906	2400	Maximus	ShanErin (D. Page)	703-941-8291	9600	Maximus
Panasonic Video	301-738-3858	2400	WildCat!	Shooter's Corner	703-444-9210	9600	WildCat!
Panasonic Electronics	301-738-3858	2400	RBBS	Shoreline (D. Shore)	301-946-2771	9600	RBBS
Paradise Isle	703-503-1322	9600	PCBoard	Silver Bullet (F. Mallory)	301-622-2247	9600	Opus
Paragon Systems (B. Frazier)	703-793-3307	1680	PCBoard	Silversoft (V. Wilding)	301-593-9323	9600	RBBS
Pavlov's Dog II	703-771-9771	1680	PCBoard	Silver Spring Exchange #1	301-989-9133	2400	Oracomm
Pc Host (R. Schinnell)	301-949-8848	9600	PH	Social City (M. Abbott)	301-249-8401	2400	Roverboard
Pedaler's Palace (Garnitz)	703-532-3051	9600	GT-Host	Source Data Corp	703-425-0985	2400	PCBoard
Pen and Brush	703-644-6730	14400	Unknown	Spiral Sea	703-684-9124	2400	TBBS
Pencil Pusher (J. Peebles)	703-430-5824	2400	PCBoard	St. Dismas Infirmary	301-585-0115	2400	Unknown
PerManNet #1 (M. Prado)	703-715-9806	9600	RA	Star-Lit	301-229-2957	2400	WWIV
Perfect World	703-255-6606	9600	WWIV	StarBase	301-445-5118	2400	Unknown
Pete's Place	301-353-1003	9600	GT-Host	StarShip	703-522-9568	9600	WWIV
Phantom	301-336-5235	2400	SearchLight	Starport	703-560-9308	14400	EBBS
Phoenix Rising II	301-445-3213	2400	WWIV	Street Noise (B. Marusich)	301-601-8710	2400	PCBoard
Player **1**	301-299-1196	14400	Unknown	Struppi's	703-591-9380	9600	PCBoard
Pleasure Palace (B. Dowell)	301-627-4953	9600	SearchLight	Sugarland (M. Schroebel)	301-340-8519	2400	QT
Polution Prevention Info	703-506-1025	2400	PCBoard	Super NOVA (D. Delong)	703-841-8738	2400	WildCat!
Port O' Call (Gambrell)	301-924-4590	9600	GT-Host	Surrealistic Citadel	703-255-1021	14400	WWIV
Presidential Hanger Club	301-736-8974	2400	RA	Swap Shop (R. Siddiqui)	703-385-3114	2400	RBBS

Washington D.C.

Area Code 202, 301, 703, List of 540 Electronic Bulletin Boards

BBS	PHONE	BPS	SOFTWARE	BBS	PHONE	BPS	SOFTWARE
System Exchange (Andrus)	703-323-7654	9600	Maximus	The Troll BBS	703-451-0096	2400	RBBS
T.D.D.	703-560-2430	2400	WWIV	The Thing (B.&B. Vostreys)	301-924-4193	2400	GT-Host
T.I.F.S.D.B. (USA)(Chiang)	301-990-6362	9600	GT-Host	The Unknown	202-667-6631	2400	RBBS
TEDI-Net (R. Mays)	703-242-8117	2400	SearchLight	The Wishing Well (S.Murphy)	301-431-4767	9600	WWIV
THE PINNACLE! \$ (Cummings)703-620-9881	9600	TBBS	The World's Address (Day)	703-330-2866	2400	WWIV	
TIDMADT (D. Aronson)	703-370-7054	9600	Maximus	The Warped Board (Welshans)	703-941-4041	1680	PCBoard
TMK/EC (L. Munoz)	703-361-7565	2400	EBBS	Thieves Guild	301-894-8516	14400	Unknown
TQM (T. Glenn)	301-585-1164	14400	RBBS	Thomas Pullen School	301-499-4575	2400	RBBS
Taesar's Palace	301-417-6952	14400	Unknown	Tick Data \$	703-866-0384	2400	Fido
Tan-D-Link (G. Moyer)	301-946-6056	2400	Major BBS	Time Portal] [.....	703-368-5429	14400	WildCat!
Tech Connect (T. Reardon)	703-551-0002	14400	PCBoard	Tiny Board (A. Combs)	703-614-8673	14400	PCBoard
TechMail (B. Hardin)	703-430-2535	2400	RBBS	Topgallant (L. Dennis)	301-595-3799	14400	PCBoard
TechNet at TJHSST	703-941-3572	2400	PCBoard	Trace of Reality (Liccel)	703-904-0936	9600	Spitfire
TechnoByte Plus	703-339-6623	14400	WildCat!	Track Stats	703-938-4705	2400	Unknown
Teddy Bear ACOA (R. Walsh)	703-821-2925	2400	RBBS	Trader Rick's	301-593-8712	2400	WildCat!
Telemar (T. Mielke)	703-968-0331	2400	WildCat!	Traffic World OnLine (Rast)	202-393-0016	14400	WildCat!
Thalia	703-533-3938	9600	Hermes	Trash-Haulers	703-406-3089	14400	SearchLight
The Arcanum	703-799-5648	2400	Unknown	Truth Seekers (D. Black)	301-949-7769	2400	WildCat!
The Attic	703-709-6691	14400	WildCat!	Twilight Clone - MAC \$	301-946-8677	9600	TBBS
The Arts Place	703-528-8467	14400	PCBoard	Twisted Platypus	703-892-9010	14400	Spitfire
The Break East (B. Jackson)	703-680-9269	14400	RBBS	Typhoon	301-277-2011	14400	WildCat!
The Beta Board System	301-983-4247	14400	Unknown	UFOria (A. Roberts)	703-803-6420	14400	Maximus
The Barracks	703-979-2154	1680	RBBS	US GPO	202-512-1387	9600	Unknown
The Colosseum	301-258-8151	14400	WildCat!	USA-GPCSC (B. Suddeth)	703-285-9637	2400	Unknown
The Castles Gate	301-206-5323	14400	WildCat!	Ultimate BBS	703-256-3047	2400	Spitfire
The CPA's BBS	202-882-9067	9600	RBBS	Unknown	301-652-0032	2400	Unknown
The Church	703-978-4611	9600	WWIV	VA Connection#2\$ (McClenny)	703-648-0250	9600	PCBoard
The Cockpit	202-862-5497	2400	Unknown	VA Connection#1 (McClenny)	703-648-1841	9600	PCBoard
The Cathedral	703-979-4027	2400	Unknown	VA Shareware Network !	703-730-0950	14400	WildCat!
The Coalition	703-448-7452	2400	WWIV	VIA	703-273-3620	2400	Roverboard
The Doors of Durin	703-536-7526	9600	WWIV	Vanguard (D. Jones)	703-671-9615	14400	WildCat!
The Edge of Insanity	301-468-9251	9600	WildCat!	Venus Garden (C. Frye)	301-588-9045	2400	RBBS
The Foundation	703-691-9817	14400	WWIV	VideoPro (T. Hackett)	703-455-1873	2400	PCBoard
The Frequency Forum	703-207-9622	2400	RBBS	Video Plus	301-248-8144	2400	Spitfire
The Flash Express	703-491-7720	14400	Unknown	Virtual Madness	202-563-1306	9600	RA
The Free American	703-768-3733	2400	WildCat!	Visionary SW BBS	703-352-7287	2400	WildCat!
The Flying PC AT (J. Kay)	301-206-9162	9600	Opus	WAFRUG (M. Saunders)	202-244-3042	2400	PCBoard
The Game Room	703-491-0083	9600	PCBoard	WMAGS	301-967-1843	2400	Unknown
The Haltsys BBS	703-799-8059	9600	Unknown	WORLDCOMM	301-657-8313	9600	TBBS
The HUB #1 (I. Towers)	703-685-0019	9600	PCBoard	WRUG (M. McCauley)	301-460-7980	2400	PCBoard
The Homestead	703-360-0658	2400	WWIV	Waldo's Magic Inc.	301-929-1722	9600	Roverboard
The Honey Board CBCS	301-933-1467	9600	Opus	Wang Users Group (R.Lyons)	703-534-3146	2400	RBBS
The Irish Connection	703-920-0334	14400	WildCat!	Warp Zone (R. Dekelbaum)	301-649-1631	9600	RA
The Looking Glass (Nelson)	703-823-1162	14400	ROS	Wash ZEPHYR (M. Hoover)	703-620-5418	9600	TComm
The Lightning Rod	301-622-0708	14400	PCBoard	Welcome Home (G. Williams)	301-627-4787	1680	WildCat!
The Mid-Atlantic	703-430-7425	14400	Spitfire	When Gravity Fails (Berlin)	202-686-9086	2400	SearchLight
The Mental Hospital	703-222-0180	2400	Fido	WhistleBlower	202-225-5527	2400	RBBS
The Next Century School	202-673-2330	2400	PCBoard	Wildcard	301-890-8515	2400	WWIV
The Outpost	703-257-1583	9600	PCBoard	Window Shop (J. McDermott)	703-878-2989	9600	Unknown
The Oracle (M. Komar)	703-802-0468	2400	Telegard	Winging It	301-340-3207	2400	TPBoard
The Power Exchange	703-749-9150	9600	Unknown	Wizard's Workshop #1	301-322-8678	9600	Roverboard
The Palace	703-435-0114	14400	PCBoard	Wizard's Chamber	301-424-7124	2400	GT-Host
The Private Palace	703-532-5861	14400	WildCat!	Women's World	301-431-0647	2400	PCBoard
The Realm	301-258-2792	2400	Unknown	WordMac (F. Carey)	301-986-0455	2400	WildCat!
The Starship Frontier	703-836-3154	2400	Spitfire	Your Place #1 (K. Goosens)	703-978-6360	9600	RBBS
The Step Club	301-593-8992	9600	WildCat!	Zonr/Strangelove	703-845-1125	9600	Opus
The Sanitarium	301-921-9641	2400	RA	Zoo	301-864-3093	14400	WWIV

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Also, with enhancements for the Copy-It! module for CD-ROM and DISK LAN based systems. This allows CD-ROM Access with ZERO TBBS Impact on LAN based systems. Supports 65 lines and 10 tasks. Fileman now supports CD-ROM carousels and six-packs. Fileman also has enhancements for Tapeman Online Tape Backup System.

Some options require LAN setup, and Copy-It! software.

COPY-IT!

At \$109.00, Copy-It! is an option that allows CD-ROM and DISC SERVER operations on a LAN. Use Copy-It! with FileMan for GIF preview and Zero Impact File Transfer. Use With TapeMan for Disc Backups without taking down the board! Copy-It! can handle 65 lines with 10 concurrent tasks! Copy-It! also has timed and real time event processing for TIMS 1.1 and TIC

ASR's FILEMAN/COPY-IT! combination is the only system to directly support the PIONEER DRM-600 CD-ROM 6 Disc Changer. The DRM-600 is available from ASR at only \$938.00 complete with

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At \$79.00 SYSMON is a realtime remote control system designed to look and work just like the TBBS 2.2 console. SYSMON can be configured to handle up to 65 lines including the console. SYSMON can also be used by your regular callers as a system overview and alarm watch system. Many features including complete system usage logging, TDBS application launcher and a duplicate user logging and drop. Version 4.1 now supports EGA43 line mode to display all 65 lines on screen at once.

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GotoCommand

At \$72.00 GotoCommand is an amazingly configurable menu jump system. This program has a wonderful interface that can be used by ANSI, ASCII and the new RIP protocol. Give your users a single command to jump to any feature, ANYWHERE ON YOUR BOARD! Each command can be configured to any SDL style authorization. Commands can be made universal, or local to a single menu. GotoCommand also has the most unique marquee ability of any program on the market. Now make ANIMATED ANSI a part of your menus. GotoCommand also works with LiveWire to allow random messages at each menu. GotoCommand works in conjunction with TBBS hot keys, but allows your callers to use multiple key options.

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BOARDWATCH

LIST OF BBS LIST KEEPERS

This listing comprises a list of those who compile and maintain lists of bulletin boards, either by topical category, or by some geographic area or definition - often by area code. The primary bulletin board system where the list can be downloaded electronically is also included.

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
96 List - 9600+bps BBS	Ken Sukimoto	Downtown BBS	(213)484-0260
AC 516 Free Shareware BBS	Harold Stein	Long Island Exchange	(516)385-7882
Airline Pilot/JUMPSEAT BBSs	Rex Chadwell	ChicAAgo Hangar	(708)980-1613
Alaska AC 907	Patti Johnson	Alaska Pirate Soc.	(907)562-1854
Apple II BBS with Internet con	Morgan Davis	pro-sol	(619)670-5379
Area Code 517 - Mid-Michigan	Rick Rosinski/SAMM	Wolverine BBS	(517)695-9952
Arkansas Area 501	Bob Underdown	The Gaslight BBS	(501)444-8420
ASP BBS Member List	Bob Ostrander	PBS-BBS	(317)856-2087
Astronomy/Space BBS	John Pickens	Starbase III BBS	(209)432-2487
Atlanta Area 404	Online Atlanta Society	OASIS	(404)627-2662
Atlanta Area 404	Rodney Aloia	INDEX System	(404)924-8472
Austin Area BBS List AC 512	Gordon L. Harlan	=ACE*BBS=-	(512)258-9553
Autocad Related BBS	Jason Osgood	SAUG BBS	(206)644-7115
Baltimore Area 410	Brad Blase	Network BBS	(410)247-3797
BBS With Handicapped Focus	Bill McGarry	Handicap News BBS	(203)337-1607
Black Run/Oriented BBS	Arthur "Rambo" McGee	BDPA BAC BBS	(707)552-3314
Business/Professional BBS	Dennis Hauser	Delight The Customer	(517)797-3740
California AC 310	Jim Walton	Illusions BBS	(310)804-3324
Central California AC 209	Jack Porter/Madera UG	Zen Den Systems	(209)675-8436
Central California Area 805	Larry Honore	His Board	(805)652-1478
Chicago	David Nathan	HURK BBS	(708)801-0823
Chicago	Paul Chartraw	Stillwaters	(708)403-2826
Cleveland Area 216	Eric Rickin	Wine Cellar	(216)382-2558
Commodore 64/128/Amiga BBS	John Rigali	Night Gallery	(818)448-8529
CompuCom Modem BBS List	Thomas Weathers	Referral Market BBS	(803)297-4395
Connecticut AC 203	Kevin Brook	Creative Edge BBS	(203)743-4044
Conservation/Nature BBS List	D.Wendling/JS Christianson	Coin of the Realm	(301)585-6697
Dallas/Ft Worth Area 214/817	Mark Robbins	Second Sanctum	(817)784-1178
Darwin National USBBS List	Bob Breedlove	Bob's BBS	(916)929-7511
Desktop Publishing BBS	Frank Atlee	Infinite Perspective	(301)924-0398
Detroit Area 313	Horst Mann	Tony's Corner	(313)754-1131

BBS LIST TOPIC	LIST AUTHOR/EDITOR	CONTACT BBS	TELEPHONE
Ecology/Conservation BBS	Bob Chapman	EarthArt BBS	(803)552-4389
Engineering Related BBS	Arthur Petzelka	Computer Plumber	(319)337-6723
Geneology Related BBS	Richard A. Pence	NGS-CIG	(703)528-2612
Graphical User Interface BBS	David Shapiro	The Gooey (GUI) BBS	(212)876-5885
Hayes Online		Hayes Online	(800)874-2937
National Adult BBS List	Clayton Manson	Titan BBS 1:3612/140	(904)476-1270
National BBS List	DP McIntire/Beth Spotts	Ameriboard	(412)349-6862
New Jersey AC 609	Dave Schubert	The Casino PCBoard	(609)561-3377
New Jersey Area 201/609/908	Wayne R. Morton	Praedo BBS	(609)953-0769
New Orleans BBS List	Jeff Jones	Southern Star BBS	(504)885-5928
Ontario Area 705	Alex Draper	Cottage Country BBS	(705)835-6192
Open Access UNIX Site List	Phil Eschallier	LGNP1 (login:BBS)	(215)348-9727
Orlando Florida AC 407	Matt Drury	London BBS	(407)895-1335
OS/2 BBS Systems	Pete Norloff	OS2/Shareware BBS	(703)385-4325
OS/2 Related BBS	Dave Fisher	LiveNet 1:170/110	(918)481-5715
Pennsylvania AC 215/609/302	Ron Brandt	DSC/VOICENET	(215)443-9434
Pittsburgh AC 412	Chas Stokes	Quad-Tech Systems	(412)262-4794
Portland Oregon BBS	Lisa Gronke	DawGone Disgusted	(503)297-9145
Raleigh NC Area Code 919	Mike Stroud	Micro Message Svc.	(919)779-6674
Republic of South Africa	Henk WOlsink	Catalyst BBS	(041)34-1122
Rhode Island Area 401	Mike Labbe	Eagle's Nest	(401)732-5292
Rochester NY AC 716	Tracy Logan	Logan's Run	(716)256-2659
San Diego AC 619	Joe Nicholson	General Alarm	(619)669-0385
San Diego, CA AC 619	Ron Dipold	ComputorEdge	(619)573-1675
San Francisco Area 408/415/510	Julie McGrew	Bay List BBS	(510)339-1045
Seattle AC 206/West Washington	Bob Dinse/Nanook	Eskimo North	(206)367-3837
Selected BBS	Joseph Caplinger & Son	J&J's BBS	(513)236-1229
South Florida Area 305/407	Eric Thav	Silicon Beach BBS	(305)474-6512
Southern California	Mike Hefferman	SOCAL Corner	(213)422-7942
St. Louis AC 314	Beth Brooks/Phydeaux Soft	Offworld BBS	(314)579-0700
Tacoma Washington AC 206	Richard Langsford	AmoCat BBS	(206)566-1155
Technical Support BBS List	Gary Barr	Digicom BBS	(812)479-1310
Tulsa Oklahoman Area BBS List	Linda Hargraves	Access America	(918)747-2542
U.S.S.R. BBS List	Serge Terekhov	Court Crimson King	7-3832-356722
Virginia AC 703/804	Scott Dickinson	TOSOR BBS	(703)366-4620
Washington DC BBS List	Mike Focke	Interconnect	(703)425-2505
Wildcat! BBS	Jim Harrer	Wildcat! HQ	(805)395-0650
Wisconsin 608		JW-PC Dataflex.HST	(608)837-1923

BOARDWATCH MAGAZINE

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Chat Chalet (201)791-8850 Saddle Brook New Jersey since 04/91. Sysop: Ron Meier. Using Galacticomm 6.03 with 16 lines on MS-DOS 80386 with 120 MB storage. Supra at 2400 bps. \$10.00 Monthly fee. Chat System. Send us your picture we will make it a Gif and put it on the BBS for all to see. "Where New Friends Meet"

Jezebel's Parlour BBS (201)927-2932 Flanders New Jersey since 04/92. Sysop: Beverly Delisa. Using TBBS 2.2M with 12 lines on MS-DOS 80386 with 120 MB storage. U.S. Robotics at 9600 bps. \$50.00 Annual fee. Over 3 gigabytes of files, including adult graphics. New in-house scanned Gif files added each week. Online games and databases, user to user chat, conference areas, and adult matchmaking. The BBS with the feminine touch.

The Starship II BBS (201)935-1485 Lyndhurst New Jersey since 07/80. Sysop: Philip J. Buonomo. Using TBBS 2.2M with 16 lines on MS-DOS 8088 with 4000 MB storage. U.S. Robotics at 19200 bps. No fee. Operating for 13+ years, Starship is one of the longest running, most successful bbs systems EVER! FREE public access, 4+ GIgabytes online, Adult & non-adult topics, chat, files, games, & databases. USR/Hayes/Telebit/v.32bis 19.2kbaud modems online!

FinComm (212)752-8660 New York New York since 09/87. Sysop: Alex Nason. Using Major BBS 6.02c with 11 lines on MS-DOS 80486 with 1000 MB storage. PPI at 14400 bps. \$49.95 Annual fee. FinComm: A financial BBS offering more than 10,000 daily closing quotes on NYSE, AMEX, NASDAQ stocks, futures, mutual funds. Financial news files, HISTORICAL DATA. Free trial!

Computers & Dreams BBS (212)888-6565 New York New York since 01/91. Sysop: William P. Stewart. Using PCBoard 14.5a/E10 with 10 lines on MS-DOS 80486 with 2600 MB storage. U.S. Robotics at 57600 bps. No fee. New York City's Best BBS! You don't believe us? Well call and find out for yourself. It's FREE. How can you go wrong? Dozens of GAMES, 1000s of FILES, 1000s of GIFs, Prizes, RIME & ThrobNet, PC Pursuable: NYNYO. Soon to have Internet & CD-ROM. Call Now

The Anterra Network (215)675-3851 Hatboro Pennsylvania since 03/90. Sysop: Steve Ferguson. Using WildCat! 3.52 with 5 lines on MS-DOS 80486 with 3600 MB storage. U.S. Robotics at 19200 bps. \$5 Monthly fee. The Philadelphia Area's Best BBS! Basic Access is free, so give us a call! Over24,000 Files & 38,000 Messages from 6 National Networks Online. Many online games (some Multi-User Real Time). "The Best Game of Trade Wars in the 215 Area Code".

Round Table BBS (215)678-0818 Reading Pennsylvania since 03/90. Sysop: Dan McCoy. Using PCBoard 14.5a/E9 with 7 lines on MS-DOS 80386 with 2500 MB storage. U.S. Robotics at 14400 bps. \$20-55 Annual fee. FREE Two Week Access for ALL.397+ E-Mail Conf on 7 Networks,Engineering, AutoCad, Windows plus 98,000 more files on every subject. 40 Megs new E-Mail & 35 Megs files added weekly. USA Today, ODMR & E-Mags online. Member USN and ASP.

The Newtown Express BBS (215)860-9724 Newtown Pennsylvania since 10/91. Sysop: Anthony Maglietta. Using PCBoard 14.5a with 8 lines on a high-speed LAN with 6000 MB storage. U.S. Robotics at 16.8K bps. \$20 Quarterly fee. Supporting 2400-16.8K and HST. 50,000+ files on-line (largest filebase in PA, NJ, DE). 1+Gig adult section featuring over 2,000 GIFs not found on any other BBS. All nodes run on dedicated 386s or 486s for fast, reliable service. 700+ conferences.

The File Bank, Inc. (303)534-4646 Denver Colorado since 01/93. Sysop: Brian Bartee & Girard Westerberg. Using TBBS 2.2M with 16 lines on MS-DOS 80486 with 9999 MB storage. USR/Intel/Hayes at 14400 bps. \$5 Hourly fee. ASP Approved BBS & one of the finest collections of IBM-Compatible Shareware. Many free download areas including extensive libraries of Astronomy Software & Data files. Message Areas, Online Games, Chat. VISA, MC, AMEX, Discover Welcome. Voice: 534-4538

Pinecliffe BBS (303)642-7463 Pinecliffe Colorado since 01/82. Sysop: Craig Baker. Using Ultrabbs 2.09Beta with 14 lines on MS-DOS 80386 with 9500 MB storage. U.S. Robotics at 14400 bps. No fee. Largest BBS in RockyMtn Area. FREE (\$20/yr gets 2hrs/day. \$100 Lifetime membership.) 60,000 zips. CD-Roms online. Games. Home of CDBREG - allows immediate upgrades with credit card. Sysop also runs a computer store. Night Owl \$49. Come help us grow!

Sound Doctrine Church's BBS (303)680-7209 Aurora Colorado since 01/87. Sysop: Tim Williams. Using TBBS 2.2M with 3 lines on MS-DOS 80386 with 700 MB storage. Supra at 9600 bps. No fee. For serious Christianity only! Where non-believers can ask the questions their Christian friends wish they wouldn't. Free items can be ordered while on-line. Look for the women's echo called Adam's Rib and our international echos. Find out who equals 666

Data Point (303)973-9454 Denver Colorado since 01/83. Sysop: Gary W Funk. Using TBBS 2.2M with 1 line on MS-DOS 80386 with 1100 MB storage. U.S. Robotics at 14400 bps. \$30 Annual fee. Online publications, and multi-player games. Large library of SDN, SDS, and TDN files. Support for MS-DOS. TBBS, TDBS, TIMS and TMail support. NetWork and FidoNet message areas.

Isles of Shae (305)321-2410 Fort Lauderdale Florida since 11/86. Sysop: Edward Bush. Using Galacticomm 6.0 with 32 lines on MS-DOS 80486 with 1300 MB storage. Supra at 19200 bps. No fee. We offer Teleconferencing, Online Trivia, Multi-User Interactive Games, Forums, Online Shopping, File Library, Adult Sections, and much much more. Come and try out Florida's Largest Multi-User BBS. Free Demo Account with new Sign-Up.

CompuErotica (312)902-3599 Chicago Illinois since 07/84. Sysop: Tiger. Using Nitelite with 11 lines on TT-030 with 200 MB storage. Supra at 2400 bps. \$45 Annual fee. If you like your chat hot, you'll love CompuErotica! Online Adult Lifestyle Conferences in chat, support files and bases, member-GIFs and more. Women receive FREE access after voice-verification. Large women's group. Come join the fun! Adults ONLY.

The Serial Port (313)286-0145 Clinton Twp, Michigan since 03/82. Sysop: Stu Jackson. Using TBBS 2.2M with 8 lines on MS-DOS 80386 with 5000 MB storage. ZyXEL at 16.8 bps. \$45 Annual fee. C'mon by for a chat and a few files. THOUSANDS of Files with Adult sections available. Many on-line games. Call today for a FREE look around, or Download our entire file list for your proofing at a later time. Visa/MC/Discover Welcome for INSTANT Upgrade

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Electronic Dreams (216)356-8738 Westlake Ohio since 01/92. Sysop: Unknown. Using PCBoard 14.5a with 1 line on MS-DOS 80386 with 813 MB storage. Twincom at 19200 bps. No fee. We offer a free, confidential, anonymous singles BBS. Our subscribers can run classified ads, exchange mail, upload statements about themselves and browse one another's photographs. Subscription includes free computer matching. Subs by mail or online.

Bird Info Network/Colorado Connection (303)423-9775 Arvada Colorado since 12/91. Sysop: Terry Rune. Using TBBS 2.2 with 5 lines on MS-DOS 80386 with 500 MB storage. U.S. Robotics at 14400 bps. \$35 Annual fee. All about EXOTIC CAGE BIRDS! Breeding, Handfeeding, Keeping! Chat, 30+ Games, THREE CD ROMS, Usenet Newsgroups, Fido Echos, The Wild Side! Messages FREE!

THe GaRBaGe DuMP BBS (303)457-1111 Denver, CO & Albuquerque, NM since 12/90. Sysop: Simon Clement/Dean Kerl/David Kerl. Using Galacticomm MBBS 5.31 with 41 lines on Dual 486 LAN Server with 850 MB storage. Supra at 14400 bps. \$ FREE 90 Days fee. Access in Albuquerque: 505-294-5675 FREE w/Validation Form, INSTANT Validation with Visa/MC. Online ADULT CHAT, files, multiplayer games, UNCENSORED SIGs. 1200+ Calls/Day, PURSUITLEABLE. Our motto says it all: CAUTION! ADULTS AT PLAY! Voice 505-294-4980.

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SHARPENIT! RBBS (413)786-4706 Agawam Massachusetts since 03/91. Sysop: Michael Scantlen. Using RBBS 17.4A with 2 lines on MS-DOS 80486 with 1000 MB storage. ZOOM VFX V42 V32 at 14400 bps. \$15.00 Annual fee. ASP APPROVED BBS serving Small Business, and the Community Over 1.0 GB available with Low \$15/Year Membership. Basic Access No Charge. Featuring Echomail Conferences, Theater, Games, EMS-FIRE, Weather-Alert. Official APOGEE NODE #500

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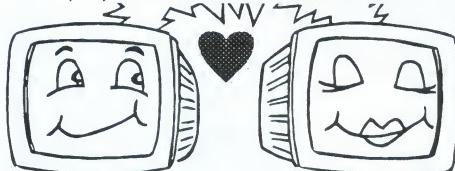


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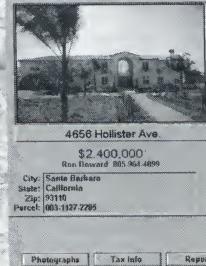
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Cardinal External 2400 Modem/Fax w/Flashlink MNP 5 Software	\$90
USR 9600/2400 S/R Fax-Modem w/V.42 & MNP 5	\$179
Practical Peripherals 9600SA Ext. V.32/42BIS - 38400, MNP 5	\$299
USR 9600/16800 Ext HST Fax-Modem w/V.42 MNP 1-5 Error Correction	\$649
Cardinal Ext 9600 V.32 Modem w/V.42BIS, MNP 1-5, & Quicklink	\$259
Cardinal Int 9600 V.32 Modem w/V.42BIS, MNP 5, & Quicklink	\$224
ZyXEL U-1496 16.8, Fax-Modem thru V.42BIS HST, MNP 5, Password Protection, Caller ID, Grp 3 Fax, & 5-Year Warranty. Call For Details!	\$599
Trident 8900C 1 MB SVGA 1024x768	\$89
Diamond SpeedStar 24X 1 MB	\$179
Diamond Stealth VRAM 1 MB	\$249
Number 9 GXITC Level 29 True Color	\$1639
ATI Graphics ULTRA 1 MB OEM	\$269
ATI Graphics ULTRA Pro 2 MB	\$669
Matrox Studio & Video Line	CALL
High Speed 16550 Serial/Parallel Card	CALL
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12/92

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - APRIL, 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
ADA 9X Project Bulletin Board	(800)232-9925	ADA Programming Language Revisions and News Information on ADA Programming Language/Military Specs	Chris Anderson/Susan Carlson	Eglin AFB, FL
ADA Information Clearinghouse	(703)614-0215	22 line PCBoard with 5.5 GB of Files	Blaine Brodka	Washington, D.C.
Advanced Data Services Inc.	(301)695-9116	36000 files/USA Today/Tradewars/Online Games	Steven Fox	Frederick, MD
Albuquerque ROS	(505)299-5974	BBS Devoted to Collecting and Distributing Consumer Feedback	Joseph G. Jerszynski	Albuquerque, NM
America's Suggestion Box	(516)471-8625	Mult-Edit Product Support BBS	American Cybernetics	Ronkonkoma, NY
American Cybernetics BBS	(602)968-1082	World Radio/TV Handbook - Short Wave Freq Lists/Scheds.	Assoc. of North American Radio Clubs	Tempe, AZ
ANARC BBS	(913)345-1978	Association of PC User Groups - Over 2000 UG officers	Paul Curtiss/APCUG	'KS
APCUG - GlobalNet	(408)439-9367	Environmental Protection Agency Atmospheric Models	William Peterson/EPA	Scotts Valley, CA
Applied Modeling Research RBBS	(919)544-1-1325	6 GB 25 Nodes Fidonet/Interlink/Metronet MC6 IL/CHI Graphics	Kevin Behrens/Steve Williams/Doug Bell	Hurdle Mills, NC
Aquila BBS	(708)820-8344	Superb support system for AST Computer Products	AST Research Inc.	Aurora, IL
AST Technical Services BBS	(714)727-4723	Support for PC 3630 and Other AT&T PC Models	American Telephone/Telegraph PC Division	Irvine, CA
AT&T Support BBS	(908)769-6397	Support for ATI Modems and Video Cards	AT&T Technologies	Plainfield, NJ
ATI Support BBS	(416)756-4591	Houston Area BBS list and Connect! Magazine	David Wachenschwanz	Scarborough, Ontario
Atomic Cafe BBS	(713)530-8875	Utilities/ASP/Patriot/Unis/Protocols	Clin Bradford	Houston, TX
Attention to Details	(714)681-6221	High-end Audio Components, Music, Video Reviews	Guy Hickey/Quatre Speakers	Mira Loma, CA
Audiophile Network	(818)988-0452	New Car Pricing Reports - Used Car Value Reports	Automobile Consumer Services Inc.	Van Nuys, CA
Automobile Consumer Services	(513)624-0552	Software Distribution System - BBS Utilities	Tom Hendricks	Cincinnati, OH
AviTechnic 1:261/662	(301)252-0717	Home of DFW Online Electronic Newsletter	Jim Lee	Lutherville, MD
BBS America	(214)680-3406	Los Angeles' First Super BBS Under Development	J. Black/K. Taghadossi	Richardson, TX
BCS BBS	(213)962-2902	Home of EEEK! Bits - Weekly Electronic Trivia Magazine	Terry Rune/Dave McClaugage	Los Angeles, CA
Beyond Eternity	(310)371-3734	Breeding, Raising, Taming, Exotic Birds	Berkeley Macintosh Users Group	Torrance, CA
Bird Info Network	(303)423-9775	Support for Macintosh owners - files - conferences.	Boardwatch Magazine	Arvada, CO
BMUG BBS	(510)849-2684	Distribution Service for USA Today/Boardwatch/Newsbytes	Business & Computer Book Store	Berkeley, CA
Boardwatch Magazine Online Info	(303)973-4222	Information on 2000 Computer Books - 800 order number	Charles Stack	Littleton, CO
Book BBS	(215)657-6130	200,000 Book Titles Database - Online Ordering	Orland International/Mike Fitz-Enz	Willow Grove, PA
Book Stacks Unlimited	(216)694-5732	Utilities, Macros, Programming Examples for Borland Products	Myles Bratter	Cleveland, OH
Borland Download BBS	(408)439-9096	20 GB of Files - Adult areas - BBS Lists	Gary Knopf/infoNorth	Portsmouth, NH
Botnay Bay BBS	(603)431-7729	Cano Trips/Resorts/Fishing/Wilderness in Minnesota	Bruce Lomasky	Ely, MN
Boundary Waters BBS	(218)365-6907	24-line Social System - Chat - Games - Downloads	Colorado Alliance of Research Libraries	West Hartford, CT
Bruce's Bar & Grill	(203)236-3761	Citations to 4 Million Texts in Colorado Library System FREE	Stan Bimson	Denver, CO
C.A.R.L. Library Service	(303)758-1551	Computer Aided Design File Distribution Network 1:1/632	Neil Fleming/Jud Newell	Hendersonville, TN
CADEngineering Service	(615)824-4938	23GB/40000+ files, 3500 Confs, USENET, IBM/Amiga/Mac	Capital PC Users Group/Roger Fajman	Mississauga, Ontario
Canada Remote Systems	(416)798-4713	One of the oldest PC User's Groups - 5500 members	Michael E. Connick	Rockville, MD
Capital PC User's Group BBS	(301)738-7906	Home of TABBY Fidonet Interface Program for Apple Macintosh	Noel Stooley (Paul of Peter, Paul & Mary)	Bradley Beach, NJ
Castle Tabby 107/412	(908)988-0706	Adventure Games, Chat - Signs - Children	Central Point Software Inc.	Blue Hill Falls, Maine
Celebration Station	(207)374-5161	PC Tools - Central Point Anti-virus support board	Brian Miller/Tess Heder	Beaverton, OR
Central Point Software	(503)690-6650	70-line PCBoard - 8 GB Files - Internet - 1000's msg. confs.	George Matyaszek	Cambridge, MA
Channel 1	(617)354-8873	Special Interest Areas for Ferret/Pet Owners. TRS80/Aviation	Randy Suess	Berwyn, IL
Chicago SysLink	(708)795-4442	UNIX System offering Internet Mail	Steve Edsall/Trader Newspaper	Chicago, IL
chinet	(312)283-0559	Online System for Classified Advertisements	Bill Kennon	Indianapolis, IN
Classi Computer Fields	(317)539-5199	Giffy Girls - Nude GIF Images of the Girl Next Door	Case Western University/AT&T/Ohio Bell	San Diego, CA
Cleveland Freenet	(619)566-7347	Cleveland City Info/Public Library - Free Internet Mail Box	Klaus Dimmerl	Cleveland, OH
Community News Service (CNS)	(216)368-3888	News and Entertainment - 17 Lines Community Focus	Wayne Rutledge/Bob Burnett	Colorado Springs, CO
CommunityLink @ DCWAS	(719)520-5000	DC Tour Info. & Help/Online Publications, Treknet/Fidonet	Wayne Gregori	Alexandria, VA
Compact Audio Disk Exchange	(703)765-0501	Adjunct to Excellent Canadian PC Newspaper	Nick Anis Jr.	Willowdale, Ontario
Computer Business Services	(416)497-5263	PR Newswire/Business Wire. Logon: hello user.cdx	Milford P. Webster	Princeton, NJ
Computer Garden	(415)824-7603	Book/P Publishing Consultant Nick Anis' BBS	Ward Christensen	Diamond Bar, CA
Computerized Bulletin Board Sys	(714)396-0014	Treasure Hunting - Metal Detectors - Online Catalog	Computing Canada Newspaper	Folsom, CA
Computing Canada Online	(301)546-1508	First Electronic Bulletin Board - Creator of XMODEM Protocol	LaFountain Research Corp/Tad LaFountain	Holliston, MA
Corporate Data Exchange (CDX)	(708)849-1132	Adjunct to Excellent Canadian PC Newspaper	Digital Communications Associates	New Westminster, BC
CrossTalk Communications BBS	(609)683-4422	PR Newswire/Business Wire. Logon: hello user.cdx	Pete White	Canyoga Park, CA
Cut-de-Sac Bar & Grill	(404)740-8428	Product Support for Crosstalk for Windows/MK4/XVII	CyberStore Online Info. Systems Inc.	Mountain View, CA
CyberStore - a COCONET BBS	(508)429-1784	Multiline Service - Ham Radio - Humor - TDBS Applications	DAK Industries/Tom Krogh	Los Angeles, CA
DAK Online Resource Center	(604)526-3676	All lines to v 32bis/v.42/v.42bls. CyberTools	Thomas E. Dell/Darkside International	Carrollton, TX
Dark Side of the Moon	(818)715-7153	DAK Mail Order Catalog - Breakmakers - CD ROMS - Computers	Matthew Schoen/Delta Enterprises	Nashville, TN
Data Core BBS	(408)245-7726	Home of WAFFLE, Unix UUCP BBS Software for DOS and UNIX	Dallas Remote Imaging Group/Jeff Wallach	Los Angeles, CA
DataLink RBBS System	(310)842-6880	25 line Major BBS	Kevin Snively	Carrollton, TX
Dawg Byte	(214)394-7438	Weather Satellite Imaging, NOAA Satellite Tracking-AMSAT-NA		Nashville, TN
	(615)385-4268	ANSI Art Club 1:16/29		

Deep Cove BBS	(604)536-5885	16 line TBBS, 3500 MBytes files for IBM, MAC, Amiga
Denver Exchange, The	104/909	Denver's Most Diverse Gay/Lesbian Info Service
Denver Free-Net	(303)623-4965	Free Community Online Service - Health Info
DragonNet 386/451	(303)270-4865	Multiline MAJOR BBS with 4 GB - 64 lines Interactive Games
EarthArt BBS	(409)765-5459	Wildlife/Conservation Art Gallery GIF Images
East Bay X-Change 372/888	(803)552-4389	Home of XRS Offline Mail Reader
Ed-Net	(803)556-7485	Vancouver School Board Multi-line Educational Network
Electric ideas Clearinghouse	(604)732-8877	Energy Efficiency Efforts in Pacific Northwest-HydroElec
Electronic Publishers BBS	(206)586-6854	News-Finance-Sports-Games-2GB File Library
Electronic Zone, The	(503)624-4966	Specializing in Hypertext
Eye Info Admin E-Publications	(412)349-3504	Variety of Petroleum/Coal/Electricity Energy Statistics
eSoft Product Support BBS	(302)586-8658	Home of The Bread Board System (BBS) BBS Software
Event Horizons	(303)699-8222	64 Line Digitized Graphics Image Library - Adult .GIF files
Exchange BBS, The	(713)521-2191	Largest Gay/Bi/Lesbian Multiline BBS in Houston
EXEC-PC	(414)789-4220	Largest BBS in US - 280 Lines - 650,000 files - 35 Gigabytes
Executive Network	(914)667-4567	Interlink Neimai National Host - Multiline PCBoard System
Eye Contact BBS	(415)255-5972	22 line Oracomm - Gay Issues - Popular Chat System
Falken Support BBS	(703)803-8000	Support for FALKEN software - 16 lines - doors - chat
Farwest BBS	(604)381-3934	Large Western Canada Galacticomm Info System
FAX/Satellite Services BBS	(619)224-3853	NOAA Weather Satellite Images - Russian/Japanese Sat Pics
FCC Public Access Link	(301)725-1072	Equipment Authorization Status Advisory Service
FEDLINK ALIX II	(202)707-4888	Info on Federal Libraries - Excerpts Library of Congress News
Fido Software Stand	(415)663-2739	The First Fido BBS and home of Fido BBS 12s
FOG City BBS 125/10	(31-30-735900	Fidonet Technical Information for Holland
Fred the Computer	(415)863-9697	Gay Community BBS - AIDS Info - Desktop Publishing - MACs
FreeBoard BBS, The	(508)872-8461	Newspaper BBS, Wierdnet Newswire. List of MA Libraries
FSLINK Prototype System	(804)744-0797	Desktop Publishing File Distribution Network 1:264/12
Fun Connection	(805)543-8227	Home of FSUUCP and FSBBBS - Unix Communications for DOS
Galacticon Demo System	(503)753-8431	Multiline Entertainment - 8 Lines Games/Chat/News
Garbage Dump, The	(305)583-7808	Customer support for Major BBS
Gateway Communications BBS	(714)963-7097	Online Chat Service - Adventure Games - National Chatlink
Gateway On-Line	(313)291-5571	Novel Network TCP/IP Shareware Utilities
GDP Technologies	(303)673-9470	Interactive Chat/MultiplayerGames. Usenet/Internet,E-mail
General, The	(619)281-8616	Outstanding IBM Shareware on a small system
GISnet BBS	(303)447-0927	Popular File Library - GIF Images
GLIB	(703)78-4542	Graphics Information Systems/Mapping topics
GPO WINDO Online Service	(202)512-1387	Gay and Lesbian Information Bureau - 11 Lines - 9600 bps
Greenpeace Environet	(415)512-9108	Fed Information from EPA, DOE, State Department - others.
Hayes Advanced Systems Support	(800)874-2937	Ecological and Peace Issues - Disarmament/Toxics/Wildlife
Heartland Free-net	(309)674-1100	Customer Support Line for Hayes Customers. V-9000/Ultra
Herpin/Satronics TBBS	(215)698-1905	Reptile and Amphibian Studies - Poison Snakes/Toads/Fish
HH Info-Net BBS	(203)246-3747	MS Windows and OS/2 Files our specialty
HoloNet	(510)704-1058	National Access,INTERNET,USNET,CHAT,GIFS,FILES
Home Power Renewable Energy BBS	(707)822-8640	Photovoltaics/Micro-hydro/Generators - Home Power Magazine
HouseNet BBS	(410)745-2037	Home Fixup/Repair/Renovation Tips , Advice, and Articles
Hysteric	(613)231-7144	Amiga File Distribution Network 1:163/109
IBM National Support Center BBS	(404)835-5505	IBM PC User Groups Database - Newsletter Exchange
Inbound/Outbound/Teleconnect	(212)989-4675	Telephone Sales Trade Magazine Online Service
Index Systems	(404)924-8414	Excellent list of Atlanta BBS systems online
Infinity World	(606)278-2002	8 line Galacticomm System - Many good text publications
InfoHost Demo BBS	(201)335-2253	Demo BBS for InfoHost BBS Software - Multiline - Database
Inns of Court, The	(615)434-2551	Space Database - Online Store - Chat
IntelpCEO Support BBS	(214)458-2820	LAN Related Files and Utilities 1:124/6/101
Invention Factory	(503)645-6275	Support for Intel PC Products - Inboard 386/AboveBoard 286
Investor's Online Data	(212)274-8110	46 Lines - 100 Directories - Full Usenet Feed - 8.2 GB
JDR Microdevices BBS	(206)285-5539	Online Investment/Stock Market Information/Tech Analysis
JOBBBS	(408)559-0253	Online Hardware Order - Catalog - 1.1 GB Files - Quizzes
Keith Graham Shareware Support	(404)992-8937	Online Job Listings - 2186 Technical Pos. - 10,000 Corps.
KIMBERELY BBS	(914)623-0039	OPTIK, TEXT2COM, CBOOT, very good shareware utilities
King's Market BBS 104/115	(612)340-2489	Prime Rate-Fed Funds-T-Bill-Discount Rate-Economic Data
LANastic BBS	(303)665-6091	400 MB Books, Writers Area - TRS 80 Support
Late Night Software 125/555	(602)293-8065	Support for LANtastic local area network
LegalEase	(415)695-0759	Home of UFGATE - Software to connect PCs to UUCP/Usenet
MAC-LINK	(509)326-3238	Legal issues/Forms -law BBS List
	(514)486-8959	Macintosh Oriented Support BBS - 6 Lines - Informat/BIX

BOARDWATCH MAGAZINE

NATIONAL LIST OF ELECTRONIC BULLETIN BOARDS AND ON-LINE INFORMATION SERVICES - APRIL, 1993

SERVICE	PHONE	DESCRIPTION	SPONSOR/SYSOP	LOCATION
MacCircles	(303)526-2550	Friendly Mac Systems Software Distributor, Mail, Sigs, Files	Patricia O'Conner	Golden, CO
Macalot Bulletin Board	(412)846-5312	Support for Second Sight BBS Software for Macintosh	Jeff Driggs/FreeSoft Company	Beaver Falls, PA
MacInternational	(803)798-3755	Largest MAC BBS on East Coast	Ralph Yount	Columbia, SC
Magpie BBS	(212)420-0527	Support/Demo System for Magpie BBS/Conferencing Software	Steve Manes	New York, NY
MaxiHost Support BBS	(209)836-2402	MaxiHost BBS - small, very easy to run BBS	Don Mankin	San Ramon, CA
McAfee Associates BBS	(408)988-4004	Computer Virus Information VIRUSCAN and CLEANUP	John McAfee/CVIA	Santa Clara, CA
Meeting Works, The	(212)737-6932	Meeting/seminar/convention planning information.	John Mackenzie	New York City, NY
METRO Online Entertainment	(212)831-9280	32 line DLX with City Guide/Ski Database - Matchmaker - Chat	Bruce Kamn/Metro Online Services	New York City, NY
Micro Foundry, The	(415)598-0398	2.2 GB Downloads - Your Online Software Source - Boardwatch	Thomas Nelson/Clockwork Software	San Jose, CA
Micro Message Service	(919)779-6674	USA Today/Boxoffice Magazine - Large Download Area	Mike Stroud	Raleigh, NC
Micro Tech BBS	(314)334-6359	Support for OSIRIS MultiLine BBS Software - IRIIS Mail	Micro Tech	Cape Girardeau, MO
Microrim Technical Support BBS	(206)649-9836	Support for Popular R-Base Relational Data Base System	Microrim Corporation	Redmond, WA
Microsystems Download BBS	(206)936-6735	Windows Technical Notes and Support Information	Microsoft Corp/Scott J. Honaker	Bellevue, WA
Microsystems Software Inc.	(508)875-8009	HardWare Software for Handicapped - CodeRunner C Utilities	MSI - Reed Lewis	Framingham, MA
MindVox	(212)988-5030	Internet Access, E-Mail, Newsgroups, rtp/telnet	Phantom Access Technologies	New York, NY
Minnesota Space Spacenet	(612)920-5566	Minnesota Space Frontier Society - NASA News	Tom Tsimidis	Minneapolis, MN
MUG-UR'S EMS, The	(818)366-1238	5 Lines - 8 Networks CD-ROMS - 2.8 GB Hub Services HST/V.32	Edward Lee Wood, Jr.	Granada Hills, CA
Mountain Air BBS	(703)427-0226	Adult Based BBS	Clarke Umer	Roanoke, VA
Movie BBS	(718)939-5462	Movie Reviews and Information - Television	National Assoc. of Cave Divers	New York, NY
N.A.C.D. BBS	(912)246-3280	Cave Scuba Diving - Superb Special Topic System	Gary Sanders	Gainesville, FL
N8EMR Ham BBS	(614)895-2553	LogIn/hbs Ham Radio/AMSAT Unix System - Satellite/Packet	MicroStar Corp.	Westerville, OH
NAPLPS Graphics BBS	(613)727-5272	NAPLPS Graphics Terminal and Editor Software	Marshall Space Flight Center	Nepean, Ontario
NASA Spacelink	(205)895-0028	NASA Educational Affairs Div. - Flight Data/Space History	Ben Cunningham	Huntsville, AL
Nashville Exchange	(615)383-0727	12 line TBBS - Games/TDBS Software Development 1.8 GB	National Genealogical Society	Nashville, TN
National Genealogical BBS	(703)528-2612	Family History - Genealogical Research - Gravestone Haunting	Netcom Online Communications Services	Arlington, VA
Netcom Internet Guest System	(408)241-9760	Internet Access System - type "guest" at login for info.	Network World Magazine/CW Communications	San Jose, CA
Network World Bulletin Board	(508)620-1178	LAN and WAN Issues and Technology	Boulder, CO	Framingham, MA
NIST ACTS	(303)494-4775	Automated Computer Telephone Service - Sync PC to NBS Time	Nat. Institute for Standards/Technology	Aspen, CO
Nixpix	(303)920-1263	Large Library of Adult GIF Graphics Images	Nick De Wolf	Boulder, CO
NOAA Space Environment Lab	(303)497-5042	Solar Flare/Geomagnetic Data Online	National Oceanographic/Atmospheric Admin	Grand Rapids, MI
NoGate Consulting	(616)530-3392	Home of PAK archive utility	Mike Neuhaus Gus Smedstad	Laurel, MD
Numisnet	(301)498-8205	Collecting of Coins, Medals, and Exonumia	The Mitchell Group	Research Triangle Park, NC
OAQPS/TN	(919)541-5742	Air Quality Planning and Standards Technology Transfer Net	Environmental Protection Agency	Decatur, GA
OASIS BBS	(404)627-2662	Home of Atlanta Bulletin Board List - ABBList	Robert Orr/Online Atlanta Society	New York, NY
Occupational Health/Safety BBS	(212)385-2034	Job Safety Issues for Artists, Musicians, Entertainers	Mike McCann/Center for Safety in Arts	Monrovia, CA
Odyssey	(818)358-6968	Adult Multiline Chat System - Games - Magazines - Downloads	Michael Allen	Washington, D.C.
OERI BBS	(800)222-4922	Educational Statistics and Data - Performance Stats - Downloads	US Department of Education	Colorado Springs, CO
Old Colorado City Communications	(719)632-4111	Political Discussions - Unix UUCP Public Access - Multiline	Dave Hughes	Thunder Bay, Ontario
Online Now	(807)345-5522	Canada's shareware house is online now	Gary Walsh/Tom Haavisto	Norcross, GA
Online With Hayes	(404)446-6336	Hayes Public Bulletin Board - Conferences/SIGS/Support	Hayes Microcomputer Products	Poortaka South Australia , Rancho Mirage, CA
Oracle PC	(610)260-6222	South Australian TBBS Multiline System	Don Crago	Colesville, MD
Oracom Support BBS	(619)346-1608	Sales and Support for Oracom Multiline BBS Software	Fran and Norm Saunders	New Orleans, LA
Osprey's Nest	(301)989-9036	Birdwatching, Bird Feeding, Naturalist/Ecology Issues	Mike Mathews	Hicksville, NY
Ozone Hole, The	(504)891-3142	Boardwatch-USA Today-Internet-Usenet/RIME	James Torro	Tampa, FL
P.D.S.L.O. BBS	(516)938-6722	Home of THE LIST National BBS List	Gwyn Reedy/PacCom Inc.	Cleveland, OH
PacComm BBS	(813)874-3078	Packer Radio Equipment Supplier - TNC/PSK Modems	Norm Henke	Edmonton, MD
PC Ohio	(216)381-3320	Shareware library with 100% USR HST access - 24 lines	Pennywise	Pinecliffe, CO
Pennywise	(800)752-3012	Online Office Supply Sales Service	Univ. of Mass. Dept. of Physics/Astronomy	Montreal, Quebec
PHYSICS Forum BBS	(413)545-1959	Physics and Astronomical Sciences	Craig Baker	Glendale, WI
Pinecliffe BBS 104/28	(303)642-7463	Large Shareware Library/Echomail Conferences since 1985	Timothy Campbell/Pinnacle Software	Tidewater, VA
Pinecliffe Software BBS	(514)345-8654	Support for Sapphire BBS Software	Phil Katz/PKWare Incorporated	West Lake Village, CA
PKWare BBS	(414)354-8670	Home of PKZIP 1.10 Compression Utility	Tom Terific	Columbia, MO
Pleasure Dome	(804)490-5878	Sexually Explicit Fantasy Chat System - Adults only	Practical Peripherals	Marshfield, WI
Practical Peripherals BBS	(805)496-4445	Support BBS for Practical Peripherals Modems	Thomas Smith/DataStorm Technologies Inc.	Indianapolis, IN
ProComm Support BBS	(314)875-0503	Home of ProComm 2.4.3 and ProComm Plus Comm Prgrms	Tim Brown/Computer Solutions	Grants Pass, OR
Promised Land, The	(715)875-1339	16-Line/2.5GB/11,000+ Files/WINDOWS, Chat & More	Public Brand Software Vendor	Indianapolis, IN
Public Brand Software BBS	(317)856-2087	Commercial Shareware Vendor	Public Brand Software	Tony Javoric/Public Data Network
Public Data Network	(503)474-6662	64-line System with \$2.50/hour Local Access		

QMail Deluxe Support BBS
 Qualitas, Inc. BBS
 Quarterdeck BBS
 QuickBBS Support BBS 363/34
 Random Access Information Svc.
 Ronin BBS
 Rose Media
 Rusty & Edies
 Sailing IC BBS
 Salt Air BBS
 San Diego NeXT User's Group BBS
 SAN Online
 Science Resource Studies BBS
 SDN Project, The 1:141/840
 SEAboard!

Seagate Technical Support BBS
 Searchlight BBS
 SemWare Support BBS
 SENDIT
 SIGCAT BBS
 Sistema Profesional Informacion
 Skeleton Closet, The
 Society for Technical Comm. BBS
 Software Creations BBS
 Sonshin Express BBS
 Sound Advice BBS
 Source for Source, The
 Spare Parts 1:130/38
 Star-Link Network BBS
 Starlink BBS
 State and Local Emergency Mgmt.
 Superdemocracy Foundation BBS
 TAXACOM
 TEAMate Unix Bulletin Board
 Telegozilla
 Telepath
 Telix Support BBS
 The Back Room
 The Business BBS
 The File Bank
 The Ledge PCBoard
 The Opowd Crowd
 The Other BBS 1:1/0
 The Well
 Titan BBS
 Tool Shop BBS
 Town Hall
 Trinity 1 BBS
 TurBoard

U.S. Robotics - Sit UBU Slt
 US Naval Observatory BBS
 USGS Quick Epicenter Determin.
 USNO Time of Day for Clocks
 UT Library Online Catalog
 Ventura Professional Forum
 WeatherBank
 Western Digital Tech Support
 Westside, The
 Wildcat HQ BBS 210/12
 Windsor Manor
 Wizard's Gate, The
 Word Perfect Customer Support
 Worldwide BBS
 WWIV Support BBS
 XTree BBS
 XYQuest Support BBS
 Yellow Dream Machine BBS

Support for QMail Deluxe and 1stReader offline mail utilis
 386MAX and BlueMAX Memory Management Software Support
 3807-8030
 (301)314-3227
 Technical Support for QEMM, DESQview, all Quarterdeck Prods
 (407)896-0494
 Product Support for QuickBBS Software
 11,000 GIF Images - 20,000 DOS/Windows Shareware Files
 503(695-3250
 Traditional File and Message BBS
 (214)938-2840
 (416)733-2780
 19GB - Home of Rosemail - Publications/Conferences
 Large ML PCBboard run by Husband and Wife - NFL/Tradewars
 National sailing system, yacht racing and clubs, tall ships
 Home of PCBboard BBS Software - National List of PCB Sys
 (801)261-8976
 Advice for Small Business Owners on Financing/Management
 Federal R&D Budget - Technical Labor Market Statistics
 (202)634-1764
 (203)634-0370
 The Original Software Distribution Network
 (804)442-6047
 Support system for ARC, SEADOG, and AXE software.
 (408)438-8771
 Installation and Specifications for Hard Drive Models
 (516)689-2566
 Support system for Searchlight BBS Software
 (800)697-4636
 Home of QEedit - A Superb Shareware Text Editor
 (404)641-8968
 North Dakota K-12 Educational Net-renter sendit.nodak.edu
 (701)237-3283
 CD-ROM / Optical Publishing Info - Lists of Gov. CD Data
 (703)648-4168
 525.590-5988
 (804)671-8547
 (703)522-3299
 (508)368-4137
 Family Oriented Christian BBS
 (510)651-2440
 Twenty Line PCBoard with 2 Gigabytes Storage - HST Modems
 (816)436-4516
 (516)968-7824
 Clipper/XBase/General Programming File Distribution 107/230
 (817)540-3527
 Largest BBS in Mexico - Spanish Language TBBS
 Genealogy Programs File Distribution Net 1:2/1/23
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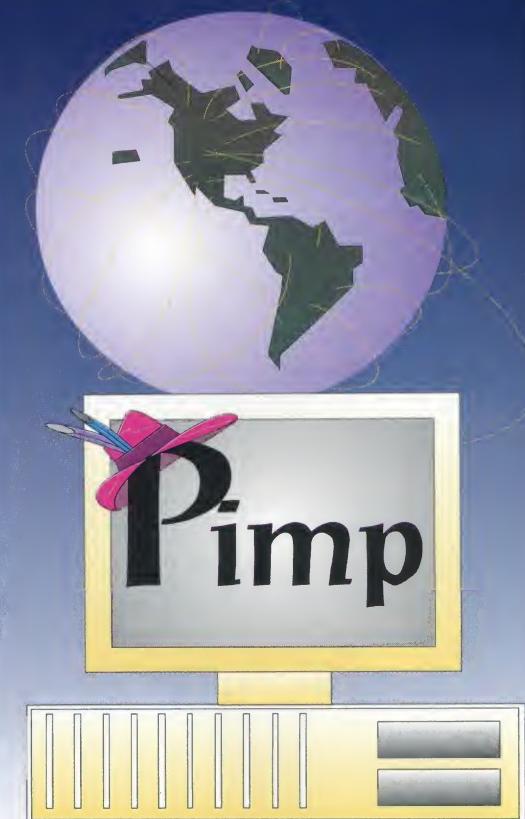
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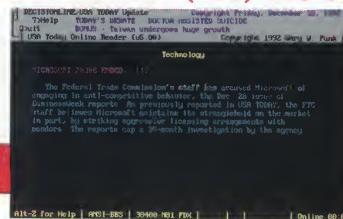
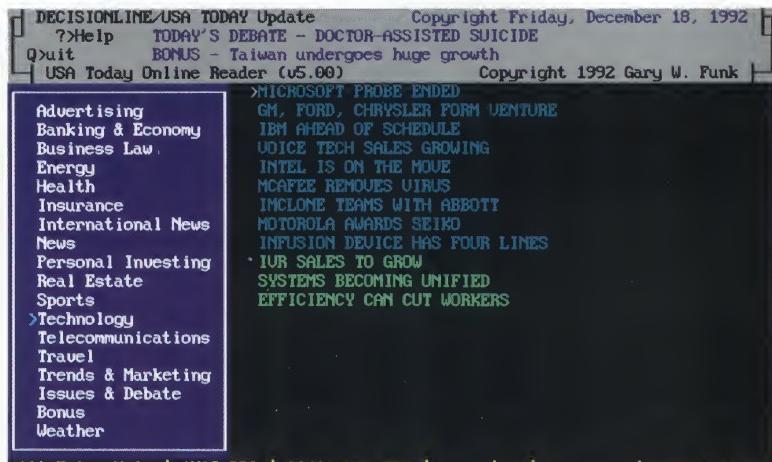
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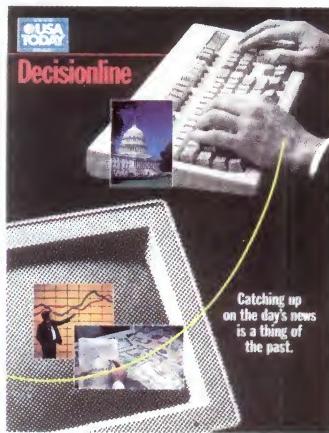


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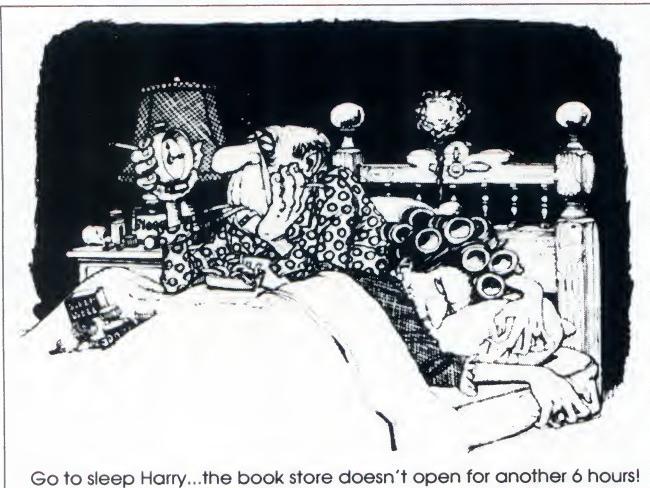


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